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AUTHOR Quillian, Benjamin F., Jr.; Rogers, Kathryn S.
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ABSTRACT

This survey, representing a wide spectrum of teaching strategies and educational outlooks, is the result of a number of requests to the National Program on Early Childhood Education (NPECE) for a concise description of a variety of tested programs for young children that can be installed by local communities. A requirement of these programs was that they be well-defined, easily transportable, reasonably economical, and consistent in attaining positive educational outcomes. Also important were availability of training and support services. The programs considered were for 4- to 6-year-olds. Target audiences were bilingual, disadvantaged, and preschool or early elementary children. The four teaching strategies represented are open classroom, structured classroom, individualized instruction, and non-institutionalized instruction. Specific program descriptions under each strategy are: open classroom, the Tucson Early Education Model (TEEM), and the Education Development Center Approach (EDC); bilingual education, the Bilingual Early Childhood Program (SEDL) and the Oral Language Program (SWCEL); structured classroom, the Demonstration and Research Center for Early Education (DARCEE)/ National Program on Early Childhood Education (NPECE) Program, and the Behavior Analysis Plan; individualized instruction, the Responsive Model Program and the Primary Education Project (PEP); and non-institutional instruction, the Florida Parent Education Model. (MS)

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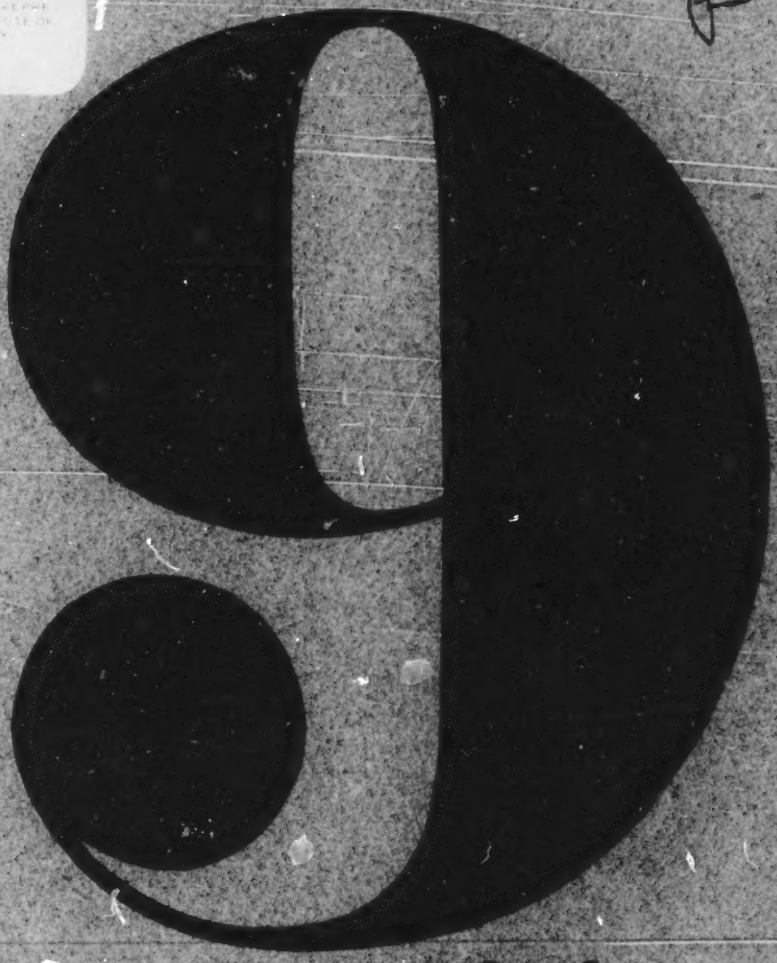

model programs for young children

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NINE MODEL PROGRAMS FOR YOUNG CHILDREN: PROGRAM SUMMARIES FOR POTENTIAL IMPLEMENTATION

VOLUME I

Benjamin F. Quillian, Jr.

Kathryn S. Rogers

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National Program on Early Childhood Education

CEMREL, INC.

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CEMREL, Inc.

10646 St. Charles Rock Road
St. Ann, Missouri 63074
314/429-3535

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INTRODUCTION

This survey is the result of a number of requests to the National Program on Early Childhood Education (NPECE) for a concise description of a variety of tested programs for young children that can be installed by local communities. These programs must be well-defined, easily transportable, within reasonable economic reach, and consistent in attaining positive educational outcomes. Availability of training and support services is also important. In addition, NPECE felt that, in order to offer communities real educational alternatives, the survey should represent the widest possible variety of teaching strategies and educational outlooks.

Although many program descriptions have been provided in the past, they have been either too cursory or too technical to be of significant use for the potential program implementor. On the other hand, a general survey of all programs could never provide an adequate level of detail. Therefore, NPECE decided to select programs from categories that would illustrate the current diversity of educational approaches.

The programs considered were for (roughly) four- to six-year old children, although a particular program might extend above or below this general age group. This choice of population was intended deliberately to span the preprimary age, during which programs are, most often, outside the structure of an established school system, and the early school years. It was felt that local initiative could be encouraged and institutional

innovation simultaneously fostered by focusing on programs that could be applied either by interested community groups or through the more formal channels of the educational system.

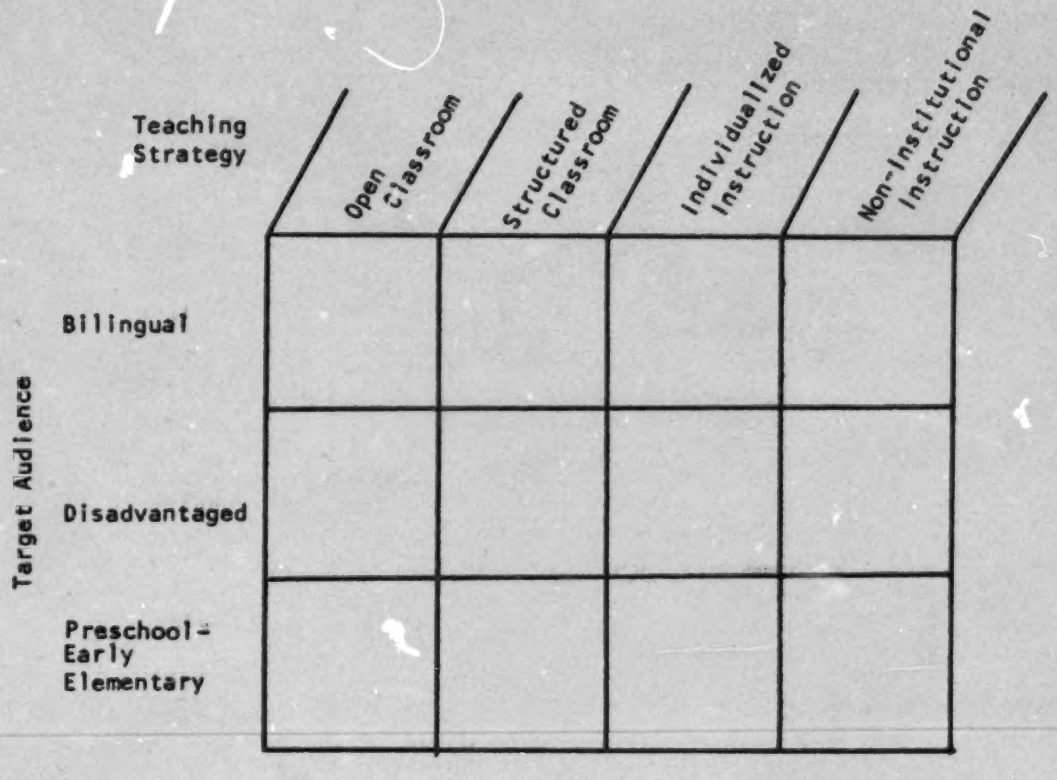


Figure 1. Program Design Matrix

A program design matrix was constructed to describe a number of general program types. Three target audiences in the four- to six-year-old group and four alternative teaching strategies were identified.

The target audiences are: bilingual (non-native English speakers or non-English speaking children, usually but not always Spanish speaking); disadvantaged (sometimes called "culturally deprived," children from economically depressed home situations); and preschool-early elementary (the general four- to six-year-old population). The four teaching strategies can be defined as follows: open classroom (the classroom environment and instructional strategy is set up to encourage child-initiated interactions with materials, peers, and adults); structured classroom (activities, curriculum sequencing, and teaching strategies are carefully specified to promote the achievement of predefined objectives); individualized instruction (teachers assess each child's abilities and provide materials, activities, and tutorial instruction suitable to him--each child works through a sequence of activities with or without supervision); non-institutional instruction (the instructional program takes place in some place other than a normal classroom, e.g., at home, in a mobile unit, through television, etc.).

As programs were surveyed, it became evident that, even with the multiplicity of programs available, not all cells of the matrix could be filled. For example, only a few non-institutional programs are developed, and even fewer are inexpensive or adaptable to urban settings. Bilingual programs tend to emphasize a combination of structured and individualized teaching strategies. NPECE did not find a single bilingual program using the open classroom approach. Finally, programs designed for disadvantaged children and those for the general preschool-early elementary population

were not clearly differentiated.[1] On the other hand, several cells had a large number of available programs from which to choose.

The survey concentrated on programs that were transportable and widely applicable in a variety of situations. These considerations inevitably removed a number of highly successful local and specialized programs from the pool of choices. This loss was regrettable, but was justified by the need to describe programs that could be easily installed in widely differing geographic settings.

All programs had to meet the following criteria:

1. The program was developed and can be implemented to serve children between four and six years old.
2. The program has an educational component.
3. The program has been used in an urban environment.
4. The progress of the program has been demonstrated in formal reports.
5. The program exemplifies one of the basic teaching strategies in the program matrix.

---

[1] One reason for this is the emphasis in recent years placed on compensatory programs for the disadvantaged. Head Start and Follow Through are specifically aimed at disadvantaged children. Nearly all the programs surveyed by NPECE were disseminated in the Follow Through program. However, many of these model programs, although used with disadvantaged children, are equally applicable to the general population. The programs that NPECE has described in the preschool-early elementary category (although all used as Follow Through models) are widely generalizable and would suffer no basic change in orientation or technique if applied generally. To avoid misinterpretation, however, the target population should be considered a less critical differentiating category in the matrix than the teaching strategy.

Once the potential programs had been identified for each cell of the matrix, the final selection was made. Since there was not time to visit individual classrooms or do extensive interviewing, the choice was based on ease of operationalizing research. Information about the goals, implementation, curriculum, and training provided by the program had to be in published form. In many cases, other programs could have been chosen. NPECE simply chose in each case to review programs well known to it or on which it had information already in its files, rather than those with which it was less familiar. Programs affiliated with the National Program on Early Childhood Education, Follow Through, and educational research and development laboratories were given preference, because it was felt that these programs would have proven transportability and reliable support services. In addition, the developers of these programs have had considerable experience with obtaining and managing federal start-up monies and in cooperating with local education agencies; experience which might prove useful to local implementors.

Figure 2 is the Program Design Matrix filled in with the nine programs finally chosen for the review. A separate chapter is devoted to each program. All of the programs chosen have been used with both preprimary and early elementary aged children, with the exception of the SEDL Bilingual Program and the NPECE/DARCEE Preschool Program, which are intended for preprimary children.

Since information for the review was based almost exclusively on published materials, certain areas could be surveyed only briefly. Most programs do not publish specific information on installation or maintenance

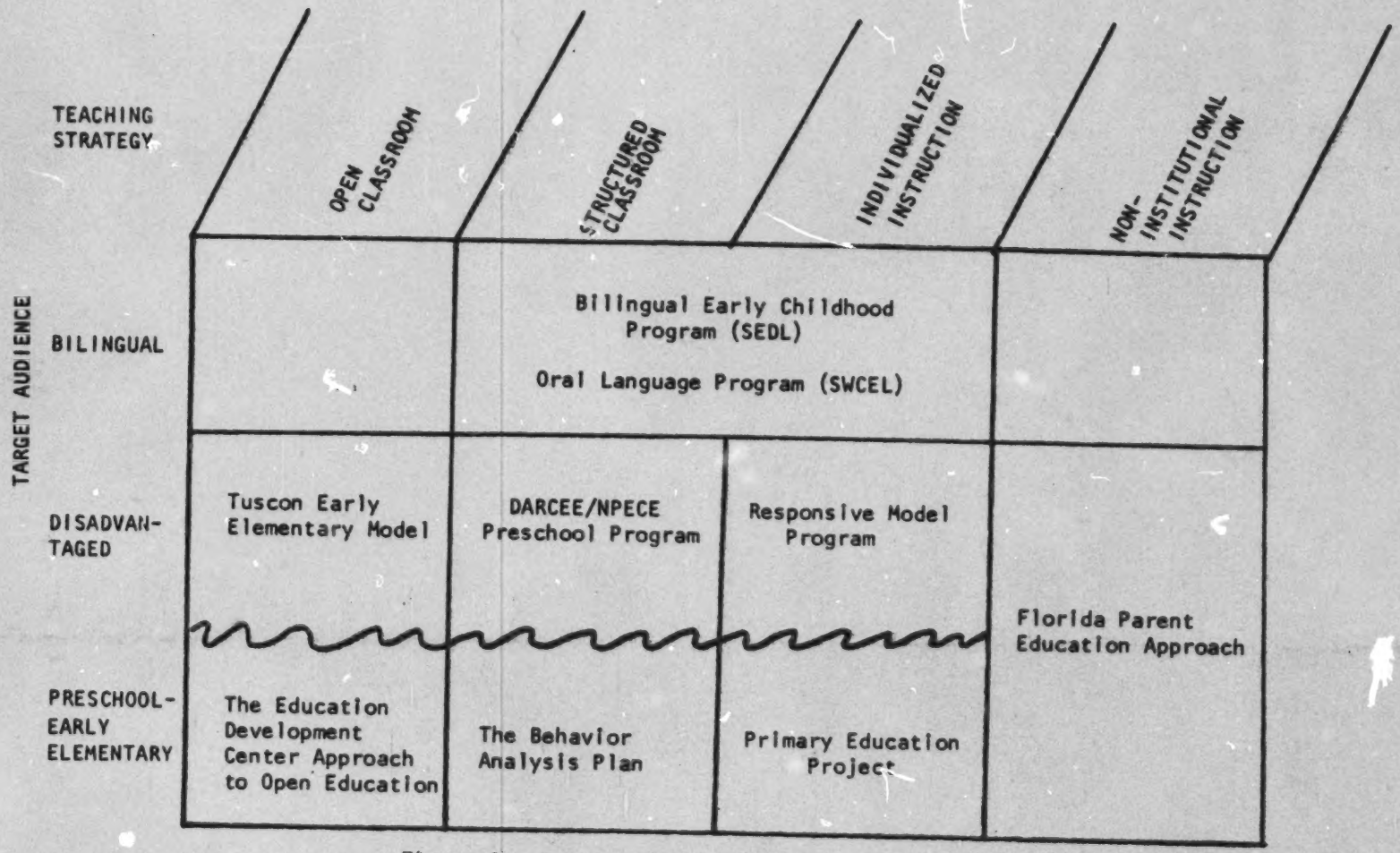


Figure 2. Matrix of Programs to be Reviewed

costs on either a per capita or gross expenditure basis. Problems encountered in initiating, maintaining, and support of the programs are also not generally discussed. Start-up activities and staff qualifications are typically only sketchily described, as are bookkeeping systems, classroom facilities, and equipment. No doubt some of this lack of information is due to the relative newness of the programs, and follow-up information may be available in the future. However, this situation is scarcely comforting to potential users who know that the cost and complexity of installation can often be crucial in deciding whether or not a program can be adopted.

Prospective implementors who desire more information about the costs and effectiveness of these programs may contact NPECE or the National Follow Through Office. The evaluation of Follow Through is being conducted by the Stanford Research Institute, and a first year report of findings is available from the ERIC Clearinghouse, 4827 Rugby Ave., Bethesda, MD 20014.

Individual contact people for each program are not usually listed in this review. Amplification of the material given here or assistance in implementing programs can be obtained by contacting the university-based center, educational laboratory, or individual developer responsible for the program.

How useful this survey becomes will depend upon how it is applied. As a means of drawing attention to a variety of programs with different, even opposing, educational assumptions, it can be a valuable and informative resource. However, it cannot be considered comprehensive even of the available types of programs. Nor is it a guide for implementation, but a

reservoir of basic information, which anyone interested in applying or installing a specific program would need to amplify with many more details.

Each chapter of the text has been written to convey briefly a sense of the program's history and educational philosophy "Program Foundations and Descriptors," its educational organization "Instructional System," its means of installing and replicating itself "Delivery, Installation, and Maintenance," and its established record of positive educational outcomes "Evaluation." In addition to chapters devoted to the nine programs, a separately bound appendix of additional information and source materials has been provided. The Appendix provides longer and more detailed information than could have been included in the text. It is sincerely hoped that this review will provide interested educators and laypersons with ready access to a variety of worthy educational programs in a concise and readable form.

THE OPEN CLASSROOM

Chapter 1

TUCSON EARLY EDUCATION MODEL (TEEM)

Program Foundations and Descriptors

The Tucson Early Education Model (TEEM) is one of 20 educational models in the national Follow Through Program. Follow Through is a federal program for disadvantaged children in kindergarten through the third grade. It is designed to continue the educational intervention provided in Head Start programs. TEEM began in 1965 as a cooperative project by the University of Arizona and Tucson School District No. 1. Several factors led to the development of the program. The program was developed out of a concern for the high dropout rate of Mexican-American students and the discrepancy between the achievement of these young children and their Anglo-American counterparts. The discrepancy between Mexican-American students and Anglo-American students in schools in the Southwest is similar to data from other minority groups (e.g., rural poor, lower class blacks) in other parts of the country. Thus, the general objective of TEEM is to enable "disadvantaged" children to achieve the necessary language competence, intellectual competence, motivation, and societal arts and skills to function as effective adults in a changing society (Zimmerman & Bergan, 1971).

TEEM is a process oriented rather than content oriented program. Three major components make up the model: instruction, psychological services, and parent involvement.

Instruction

The purpose of the instruction program is to structure a learning environment that will foster development of the child's behavior as defined by the general objective of TEEM stated above (language competence, intellectual competence, motivation, and societal arts and skills). TEEM identifies several instructional process variables as crucial to the instructional program. These variables are described below.

Individualization. TEEM emphasizes frequent opportunities for small group and one-to-one teacher-pupil interaction in the classroom. The following examples illustrate how activities may be individualized.

> In working with measurement concepts during a committee [small group] activity, one child grasped and learned the concept that materials weigh different amounts and that one can compare materials by their weight. Another child accurately recorded and compared the weights of several different materials. A third child graphed his comparisons. The invitation to this activity read "How may weight be used to compare these materials?" A scale, pencils, plain white paper, and graph paper were provided for the children in addition to ten objects, each weighing a different amount. This activity provided an "open ended experience" for the children in which varying rates of development could be accounted for. Within a writing activity children were invited to "Write a story titled TODAY AS I WAS COMING TO SCHOOL." One child dictated his story to the teacher assistant. Another child wrote a poem. Another child used a "rebus spelling" occasionally adding a picture in place of a word. Again, this activity provided for a range of abilities and each child's work was accepted by the teacher (Rubow & Fillerup, 1970, p. 20).

Modeling. When teachers demonstrate examples of behavior verbally and physically so that they may be performed by the children this demonstration is called modeling. For example, the teacher may model enthusiasm for learning, reading ability, speaking ability, and the like. Four steps are suggested as a procedure for developing effective modeling techniques in the classroom: (1) establish a supportive relationship with the child,

(2) determine what is to be modeled, (3) model the behavior in interaction with the child, and (4) reinforce the child's behavior as it occurs (Rubow & Fillerup, 1970).

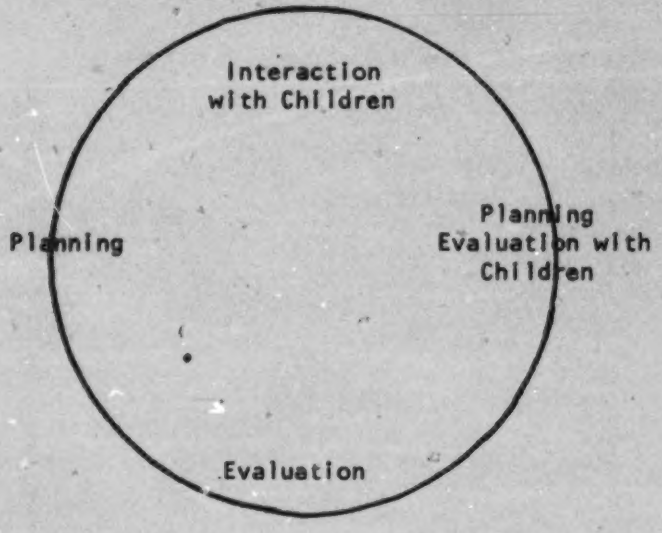
Orchestration is the third basic concern of the TEEM instructional process. Orchestration is the integration of the four goal areas of the program within the instructional process. Skills in language, intellectual base, motivation, and societal arts and skills are not taught separately in TEEM, but are taught simultaneously in real and meaningful settings which allow the child to see the interrelation of skills and their relevance to out-of-school situations. TEEM believes that orchestration promotes a broader use of intellectual skills in the child's natural world than does the sequential pattern of skill instruction.

Acceptance of the child, as an instructional variable, means that the teacher should in some way communicate to the child that he is important. The teacher should try to develop in the child a positive self-concept. This is done by accepting the child's language, family, and culture. Attempts are made to base the materials and activity content of TEEM on experiences that are directly related to the child's everyday encounters with his home and neighborhood.

The organization in a TEEM classroom seeks to promote quality interactions with the classroom environment. Basic to the organization of the classroom are two fundamental activities: (1) committee work time (small group activity), and (2) free choice time (periods of the day during which the children may choose the activities on which they wish to work from a set of tasks selected by the teacher). It is the teacher's role to

plan these activities for the purpose of extending and expanding the knowledge and growth of the children. The classroom is organized to facilitate teaching children individually. Behavioral options are provided to allow children to develop skills at their own rates. The appropriateness of a learning task is determined by (1) the past experiences of the children, (2) the interest of the children, (3) their level of development, (4) provisions for individual differences with the group(s), and (5) the relationship between the task and the future learning of the children (Rubow & Fillerup, 1970).

Planning and evaluation are essential to the TEEM instructional process. Both operations are done at two levels: (1) adult planning, and (2) the adult and child planning together. Thus, planning and evaluation become an interaction process between teacher and children. The following diagram illustrates the TEEM cycle of planning and evaluation:



Reprinted from: Rubow & Fillerup, 1970, p. 25.

Reinforcement is a crucial element in the TEEM learning process. Every effort is made to insure that the child experiences frequent gratification as a result of his behavior and skill acquisition. Adults in the classroom are trained in the technique of social reinforcement. Several techniques of reinforcement are suggested (Rubow & Fillerup, 1970, pp. 15-16).

1. Touching a child in a reassuring, supportive manner appropriate to his age and social expectations.

2. Specific verbal praise for a specific act.

3. Attention to the child--listening closely to the child and allowing him to talk--moving or leaning toward a child--listen to the child read.

4. Putting into effect what the child suggests; encouraging others to do the same as he does; using the child as a model for the other children.

5. Displaying the child's work.

6. Clarifying or extending a child's remarks, e.g., "Yes, shots keep you well and you don't get sick as often."

7. Say something comforting: If a child says, "My Daddy is out of work again." The teacher might respond, "Maybe there will be more work soon. I hope so."

8. Using eye contact and facial clues:

   a. Exchange a knowing glance with a child
   b. Smile
   c. Praise the child and sweep the group with your eyes to enlarge the aura of approval for the child.

9. Deflect questions: Say . . . "What do you think, John?" when another child asks a question. This implies you need John's help, shows you have valued help he has given in the past, and turn to him for help now.

10. Recall a point: Say, "As John said earlier . . ." and then restate what John said to you at an earlier time. This is considered extremely reinforcing as John realizes you have accepted his idea so totally that you have made it your own.

11. Time the praise or reinforcement so that it closely follows the behavior you wish to reinforce. With more sophisticated children or older children delayed praise is very reinforcing because it shows the praise is not just an automatic "thank you" but that you really were impressed and remembered what he did or said.

12. Ask questions which give children encouragement or opportunity to continue his exploratory behavior.

13. Accept what the child says. This reinforces his efforts to communicate. Do the modeling of correct usage at a much different (later) time.

Psychological Services

The purpose of psychological services is to support the instructional program of TEEM. This component focuses on learning and adjustment problems identified by the teachers and other personnel. The primary objective is to formulate and implement strategies that will enable each child to achieve the goals of the instructional program (Bergan, 1969).

Three kinds of activities are included in the psychological services component: research, consultation, and evaluation. The research activities seek to translate knowledge of the field into practice, thus fostering interaction between the researcher and the practitioner. The results of studies at the Arizona Center for Early Childhood Education are used in training the psychological service workers. Continuing inservice training sessions help to keep these practitioners in touch with recent knowledge in their field.

Consultation between the psychological service worker and school personnel is the basic link in the psychological service component. The purpose of consultation is to devise strategies that can be implemented in the classroom to modify children's behaviors. The teacher and psychological

service worker meet in a series of interviews, where they identify and analyze specific problems and formulate intervention procedures and record-keeping plans. The purpose of the consultations is to enable teachers not trained in psychology to employ psychology in the solution of educational problems. Both teacher and consultant bring their skills to bear on the problem. Typically, the result is a strategy that neither could have devised alone.

The fourth phase in the consultation is evaluation. Unlike many programs of psychological intervention, the TEEM psychological services component emphasizes achieving behavioral changes in children rather than problem diagnosis. The record of behavioral changes kept by the teacher establishes whether or not the problems have been solved and it tells the psychological service worker which procedures have been most successful.

Implementation of the psychological service system requires the coordination of activities with the Arizona Center for Early Childhood Education and the dissemination of information to the schools. Procedures must also be devised for training psychological service workers. A computer system--the Computer-Assisted Psychological Services System (CAPS)--which packages knowledge and skills in system components aids collection and dissemination of this information.

Parent Involvement

This component emphasizes the complementary roles of the school and the home in the intellectual development of the child. More specifically, the parent involvement (PI) program aims to modify the child's home environment in ways that will support and reinforce classroom instruction. The PI program is guided by two conceptual frameworks.

Figure 1 defines the educational objectives of TEEM (the four goal areas mentioned previously) in terms of the environmental learning variables that affect these objectives. The model shows how the four learning objectives are related to learning variables in two educational settings, school and home. This matrix can be used to locate where intervention can modify the home environment. Taking cell Ib·E·H as an example (shaded on the matrix), PI personnel could suggest a range of activities which the family could provide at home to introduce environmental stimulation of intellectual base skills.

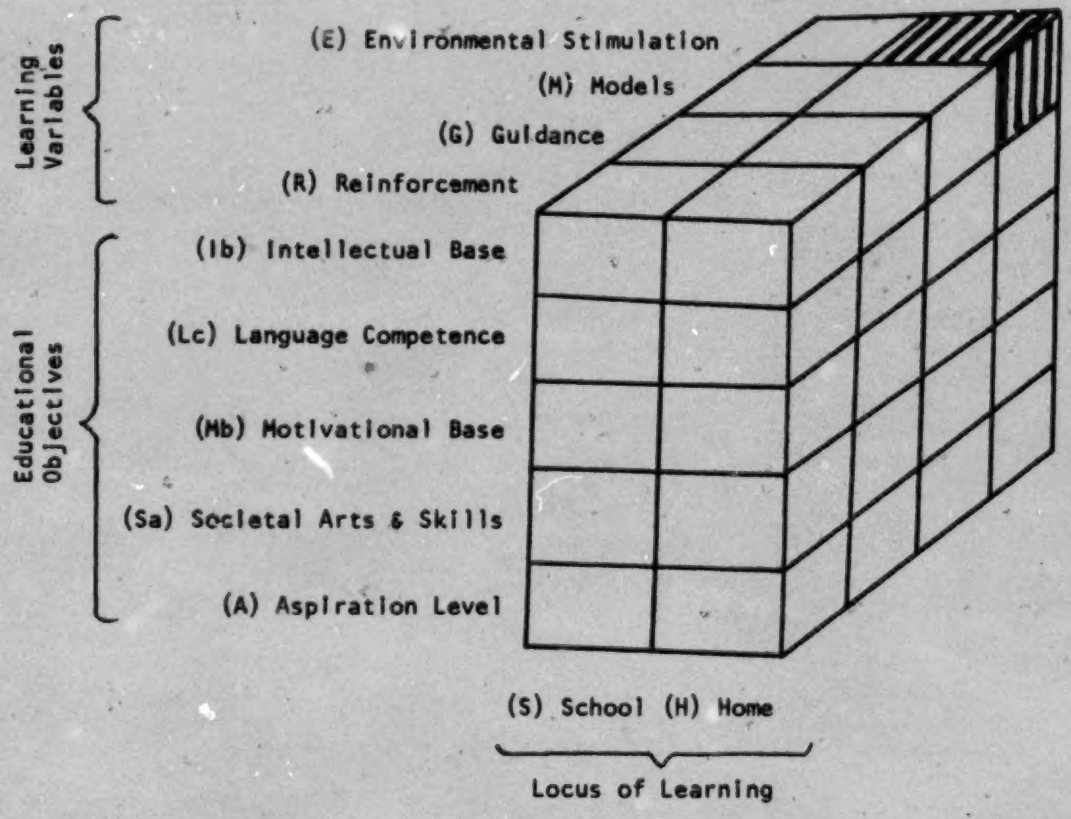


Figure 1. Interrelationships Among Learning Variables, Objectives, and Environments

Adapted from: TEEM, 1971, p. 14.

The second conceptual framework for parent involvement describes the ordering of activities to involve parents in the program. Henderson (1970, pp. 13-15) explains the six stages of the program.

> Frame one of the program has two principal objectives. The first is to reduce parental feelings of alienation from the school by initiating frequent, always positive, communications to the home concerning the child's progress in school. Many parents have learned to expect only negative communications from the school, and this expectation must be changed before further progress can be made.
>
> The second goal in this frame is to begin to acquaint parents with the objectives of the instructional program. This is particularly important for any program dedicated to new objectives. For example, as the parent learns that his child is asking more questions, and different kinds of questions, and that the teacher places a high value on this behavior, [the parent] may begin to understand that questioning is an important behavior. Later, other information-seeking skills will be identified in the same way.
>
> Frame two is intended to elicit from parents responses that reinforce the child's school related behaviors. For example, a parent may be asked to question a child concerning one of his school products which has been sent home, thereby providing reinforcement through parental attention. This example is taken from the Mb·R·H cell of the model presented in Figure 1.
>
> Frame three includes a variety of opportunities for parents to participate in guided observation of classroom activities. Observation should be preceded by an orientation intended to focus attention on particular activities and procedures in the classroom. For example, early observation might focus on the use of positive reinforcement by classroom adults. . . . Later, attention may be focused on the use of the reading environment, and follow-up discussion can indicate the importance of modeling as a means of influencing children to use reading materials. This example builds upon the relationship between the cells for Mb·M·H and Mb·M·S.
>
> Frame four is guided participation in the classroom. Following opportunities to learn classroom procedures through observation, parents are invited to serve as volunteers in the classroom, using their own special skills and experiences within the program framework. A father who works with wood might participate with a group of children, helping them to discriminate similarities and differences in grain and density of different woods. He might

be best suited to particular purposes. This example involves the guidance learning variable and the intellectual base category of objectives (ib·G·S).

Frame five is designed to promote transfer of principles which parents have observed and applied in the classrooms, to application in the home environment. Small groups of parents, working with parent involvement coordinators and psychological service personnel will discuss their classroom experiences, and suggest ways in which the home may support and supplement the activities of the instructional program.

Frame six is the point at which branching will begin to provide for different interest of parents. Some may wish to learn behavioral recording techniques and other skills useful for classroom aides or psychological services aides. They may follow their specialized interests by working as volunteers in either of these program components. In some communities it will be possible to help them become involved in training programs for new careers. Other parents may wish to gain added skills in working with other parents in their neighborhood and may assume paraprofessional positions in the PI program. Others may wish to have a more direct influence on educational policy, and should be provided with knowledge of the administrative structure of the schools and of the political pressures which influence educational policy.

. . . the intent of the program is that by this frame parents will be sufficiently aware of a number of alternatives that they may help to develop those alternatives identified by the parent group itself.

By basing intervention strategies on the natural environment of children, TEEM believes it is possible to aim at the same learning objectives in both school and home. Parent involvement and psychological service workers work together to emphasize the complementary role of school and home in the child's intellectual development.

Instructional System

The Tucson Early Education Model is oriented toward the development of the child's intellectual process rather than content, cognition,

and recall. No formal lessons or rigid structure are provided. Zimmerman & Bergan (1971) state that TEEM's approach attempts to develop "the child's ability to perceive and process relevant stimuli through multiple modalities (p. 25)." Intellectual operations other than cognitive skills are constantly used to facilitate school learning.

Teachers and teaching assistants have considerable freedom in determining the learning environment in the classroom. The room is organized into behavioral settings, to facilitate interaction between the child and his environment. Interest centers which include materials that will provide open-ended experiences for children at differing levels of development are the basis of the classroom organization. Tables are arranged to make it possible for children to work independently in small groups.

Classroom groupings are kept heterogeneous in TEEM in order to increase the opportunity for children to learn from peer models. Most structured lessons are carried out in small groups with an adult and about five children. This provides for a great deal of individual attention for each child. Activities generally evolve from daily planning sessions with the teacher and teaching assistants and, at times, parent volunteers. The interests, needs, and past experiences of individual children are considered in planning activities. Every effort is made to make activities relevant to the children's out-of-school environments, thus using their experiential backgrounds as a teaching resource.

The organization and atmosphere of the TEEM classroom provides the child with a variety of behavioral options. For at least one period during each program day, the child organizes his own activities around

available space and materials. Even in structured activities, the guiding principle is that, in order to learn the child must have the opportunity to choose among behaviors, to verbalize, to handle materials, and generally to engage actively in the learning process. It then becomes the teacher's responsibility to encourage those aspects of his repertoire that are congruent with educational aims.

A fundamental belief of the TEEM program is that the teacher must understand the intellectual processes she attempts to structure and convey, if she is to be a help to the children. The results of research at the Arizona Center for Early Childhood Education are disseminated to TEEM classroom teachers, to provide a base of knowledge which teachers can use to plan classroom activities. Teachers are kept abreast of TEEM developments through the circulation of TEEM Exchange, a publication of the Arizona Center for Early Childhood Education at the University of Arizona. The publication gives practical articles on the model, and discusses new psychological services and parent involvement components. In addition, the magazine attempts to answer questions raised by TEEM teachers throughout the country. Each issue focuses on a different aspect of the model--instruction, implementation, research, and evaluation.

Delivery, Installation, and Maintenance Systems

Delivery, installation, and maintenance of the TEEM Model is provided by training programs and various support systems. These training programs and support services are available for the three basic components of the program, instruction, parent involvement, and psychological services.

At each level there are representatives from the Arizona Center and trained personnel in the community.

Teachers are generally trained in Tucson during a six-week summer session. The training technique used most frequently is modeling, i.e., the teachers are given opportunities to observe experienced TEEM teachers in action. The training also consists of lectures and actual teaching experiences. When the teachers return to their home communities, they are considered fully trained. For this reason they are visited periodically (approximately every ten days) by a trained TEEM staff member from the community, who is called a program assistant. Program assistants observe, answer questions, and offer suggestions that guide teachers closer to the goals and process variables of the model.

Program assistants are kept informed by the TEEM field staff, who travel from Tucson to the various communities to disseminate new ideas and developments. Parent involvement coordinators and psychological service workers are also trained by TEEM and assisted by TEEM field representatives.

The field representatives operate from the Arizona Center for Early Childhood Education. They travel into the field to offer support and guidance to implementation personnel. Pertinent research findings are communicated to program assistants, parent coordinators, and school psychologists who in turn communicate them to parents or classroom teachers through their consultations. The field representatives sometimes relay questions or hypotheses from the field back to the Center for further research and development. In this manner, the delivery system insures a

constant flow of communication among classroom personnel, researchers, and training personnel.

Assistance also comes from the inputs of TEEM program assistants. Program assistants are trained TEEM staff members, located in various communities. It is their responsibility to work closely with teachers in the planning and implementation of the TEEM program. Generally, the program assistants visit a given teacher about every ten days to insure a classroom environment that is in keeping with the goals and process variables of the model.

Field representatives relate the latest TEEM developments to the program assistants. Field representatives are based in Tucson, but travel periodically to visit program assistants, and in some cases classroom teachers and involved parents.

The instructional system of TEEM is not a structured uniform product. Rather, the system is the result of the plans of the classroom teacher and the teacher aides, who take into consideration their knowledge of the children, the goals of the model, the process variables, and the resources of TEEM as they plan meaningful activities for their classroom. Descriptions of lessons which have been taught in TEEM classrooms are included in the Appendix.

Evaluation

Evaluation of the TEEM program has generally focused on the success of teachers in adopting TEEM's teaching techniques and attitudes. Numerous studies have been conducted to determine whether or not the TEEM

program does in fact make contributions in accordance with its goals. A few such studies are described here.

Rosenthal, Underwood, & Martin (1969) studied the possible effects of TEEM upon teacher behavior and attitudes. In one of their studies the incentive practices of 64 classrooms employing the TEEM approach were compared to 91 conventional classrooms. The study found that TEEM classrooms "were characterized by a higher incidence of approval from teachers, more frequent spontaneous student solicitation of teacher attention, and less teacher censure of students (p. 61)" than were the conventional classrooms. In another study, using a sample of 879 TEEM and non-TEEM teachers, Rosenthal et al. assessed teacher attitudes. A 75-item measure, known as the Survey of Educational Attitudes (SEA), was constructed to assess whether the philosophical orientation of TEEM teachers was similar to that desired by TEEM personnel. In most instances, TEEM teachers scored significantly higher (closer to TEEM orientation) than did non-TEEM teachers. In still another study by Rosenthal, data indicate that after six weeks of training teacher's scores on the SEA could be significantly raised. These studies tend to indicate consonance between the beliefs and actual performance of TEEM teachers.

Zimmerman (1970) assessed the effectiveness of TEEM in modifying the attitudes of principals, teachers, and teacher aides. The study was based on a sample of 121 teachers in school districts where the TEEM program was in effect. Fourteen school districts were sampled from the following cities: Abbeville, Louisiana; Baltimore, Maryland; Chicksha, Oklahoma; Philadelphia, Mississippi; Des Moines, Iowa; Durham, North Carolina;

Fort Worth, Texas; Lakewood, New Jersey; El Monte, California; Newark, New Jersey; Santa Fe, New Mexico; Shavner, Oklahoma; Vincennes, Indiana; and La Fayette, Georgia. One hundred teachers made up the experimental group and 21 comprised the controls. The controls were matched with the experimentals on demographic information such as age, sociocultural background, and the general ability of their students. The children, primarily from the lower socioeconomic class, represented the following sociocultural groups: white Anglo-American, Mexican-American, Black, American Indian, Cajun, and Oriental.

The SEA was administered before the beginning of the school year and again in the spring to experimentals and controls. The data were analyzed using a repeated measures analysis of variance design. There were sizable and statistically significant differences between the experimental and control teachers, indicating that the experimental teachers had greater concordance with the TEEM philosophy ($p < .005$). Furthermore, the changes in attitudes occurring from the fall to the spring testings were significant ($p < .001$).

The SEA was also administered to the principals in the various schools in the fall and again in the spring. Because the principals did not participate in the TEEM workshops and other training sessions with the teachers, the principals attitudes could only have been altered as a result of indirect attitude diffusion from the teachers working under them. The data indicated that there was no significant diffusion effect, and that principals should be included in the TEEM teacher training program.

Teacher aides are trained by the classroom teachers. Zimmerman (1970) used 99 aides in another facet of the study. The aides were given

an abridged version of the SEA, and Program Aide Attitude Test (PAAT), in the fall and spring. The PAAT scores revealed a significant decorement in teacher aide attitude scores. That is, the aides evidenced significantly less concordance with TEEM philosophy as a result of one year's participation in the program. Such a finding suggested to the researchers that there is a need for formal training of the teacher aides.

Zimmerman & Bergan (1971) focused on teacher question-asking behaviors as a menas for initiating intellectual operations in students. A six-category Intellectual Operations (IO) model, based on Guilford's (1967) Structure of Intellect, was used to categorize the questions. It was hypothesized that teachers would tend to ask more questions in the cognition category because of the general school emphasis upon content mastery. Because of TEEM's process orientation, it was hypothesized that teachers who had been trained in the TEEM methodology would place less emphasis on the cognition category and give more attention to other IO categories than non-trained teachers.

A total of 117 teachers, 42 trained and 75 non-trained, were selected for the study from four school districts located in Des Moines, Iowa; Abbeville, Louisiana; Fort Worth, Texas; and La Fayette, Georgia. The children in the classrooms represented a variety of sociocultural groups: 20 per cent white Anglo, 18 per cent Mexican-American, 52 per cent Black, 9 per cent Cajun, and 1 per cent Oriental or American Indian. The average family income was less than $5,000.

Each teacher was audio-taped for 40 minutes during normal classroom interaction. The questions on the tapes were then categorized

according to the IO model. The results tended to support the hypotheses. That is, TEEM teachers exhibited a significantly greater percentage of perceptual questions and other questions than non-trained teachers and a significantly small percentage of cognition and memory questions than did non-trained teachers.

Zimmerman (1970b) attempted to assess the efficacy of the implementation procedure in modifying the verbal patterns of TEEM teachers. The following hypotheses were posited: TEEM teachers would exhibit more praise, more expansion, more open-ended questions, fewer close-ended questions, more corrective feedback, less information-giving, and less direction-giving than non-program teachers. More student talk would be exhibited in TEEM classrooms. In order to test these hypotheses, interaction between teachers and children was audio-taped for 15 minutes in a controlled situation, with 5 children. A 10-category analytic instrument, the Teacher Behavior Analysis Model (TBA) was used to assess and categorize the verbal behavior of the teacher. Table 1 shows the categories of the TBA.

One hundred nine TEEM teachers and 58 non-program teachers were used in the sample. The teachers represented a wide variety of geographic areas.

The results tended to support the hypotheses. For three of the hypothesized differences were statistically significant ($p < .05$), and a fourth almost attained significance. Furthermore, the writers concluded that the directionality of six of the eight categories support the hypotheses, even though statistical significance was not attained. The results,

overall, suggested to the researchers that the TEEM program had significantly altered the verbal patterns of teachers of disadvantaged children from diverse linguistic backgrounds.

TABLE 1. TEACHER BEHAVIOR ANALYSIS MODEL

Hypothesis	Category	
+	1	*Praise*—praise or encouragement of student behavior. The statement should indicate a definite affirmation of whatever event preceded it.
+	2	*Expansion*—provision of additional content to the child's verbalizations. This involves a detectable content contribution by the teacher to the student's statement.
+	3	*Open-ended questions*—asking a question that may be answered by a variety of responses.
−	4	*Close-ended questions*—asking a question designed to elicit a specific response from the child.
+	5	*Corrective feedback*—restatement or partial restatement of a student's verbalization. There is no discernible addition of new content in the restatement, only the linguistic elements necessary to make the child's statement logically and syntactically complete.
−	6	*Information-giving*—imparting knowledge by any form of lecturing or demonstration.
−	7	*Directions*—instructions phrased in the imperative form under the implied assumption that they will be followed without equivocation.
	8	*Punishment*—verbal criticism, chastisement, or justification of authority.
+	9	*Student talk*—any distinguishable student verbalization.
	10	*Silence or confusion*—any indistinguishable verbal behavior or period of verbal inactivity.

\+ : positively hypothesized directionality
− : negatively hypothesized directionality

Reprinted from: Zimmerman, 1970b, p. 223

Chapter 2

THE EDUCATION DEVELOPMENT CENTER APPROACH TO OPEN EDUCATION

Program Foundations and Descriptors

The Education Development Center, Inc. (EDC) is a private non-profit corporation engaged in educational research and development. EDC, located in Newton, Massachusetts, provides support for educational programs, school innovations, materials, and pre- and inservice training for teachers. One of the major programs of EDC, is the Open Education Follow Through Project. So far, the EDC Open Education approach has been installed at eleven sites throughout the nation. The purpose of this project is to extend the gains children make in Head Start at least through primary school.

"Open education" is a term that refers to an approach to teaching that has been widely employed throughout the British infant schools. The approach is primarily based upon the findings of the Swiss psychologist Jean Piaget.

> Piaget says that children learn over varying periods of time, in repeated encounters with concrete experiences, and in exchanging points of view . . . Piaget's observations, says one EDC staffer, point strongly to the conclusion that: "Good pedagogy must involve presenting the child with situations in which he himself experiments, in the broadest sense of that term--trying things out to see what happens, manipulating things and symbols, posing questions and seeking his own answers, reconciling what he finds at one time with what he finds at another, and comparing his findings with those of other children" ("Open Education," 1971, p. 50).

There is no standardized structure to open education, and there is considerable difference in the organization of various classrooms that employ the approach. However, the usual classroom set-up and the teacher and student roles are made more informal, and learning becomes a highly individualized experience. The characteristics common to open classrooms are:

> --Classrooms are decentralized and the familiar rows of desks and chairs replaced with separate "learning areas."
> --Children are free most of the time to move throughout the room, talk to each other, and choose their own activities. Children from different grades frequently work together in the same classroom.
> --Teachers work mostly with individual children or groups of two or three.
> --Heavy stress is placed on designing a classroom environment rich in learning resources, including plenty of concrete materials as well as books and other media ("Open Education," 1971, p. 47).

In essence, the open classroom attempts to be truly responsive to the needs and interests of children. Efforts are made to tie the child's learning to his experience, to make his learning useful and relevant, to provide an environment of mutual trust and respect, and to structure a climate conducive to open dialogue among students and teachers. Traditional academic skills are important, but the children have the opportunity to pursue them in more flexible self-directed ways so that their learning becomes a part of their life style both inside and outside the classroom.

EDC has developed a twofold strategy to extend the learnings of Head Start children: (1) they assist schools and teachers in establishing the open classroom method, and (2) they have developed an on-going advisory group to provide both philosophical and practical long-range support services to a school system.

Instructional System

The curriculum content of the EDC approach is not narrowly specified. Each school and individual class tends to develop its own "open climate." This is because the approach seeks to be responsive to the needs and interests of the children as well as the talents and styles of the teachers. What is taught in any particular school or classroom is strongly influenced by local conditions and objectives. The result is that the EDC approach is primarily concerned with the process of learning, i.e., how is the material taught and under what conditions are children permitted to learn.

This is not to imply that the instructional system disregards all of the traditional academic skills. For example, communication skills such as reading, writing, and speaking are considered crucial to the open learning environment. Similarly, mathematical concepts are deemed important. But literacy training, the dissemination of information, and the acquisition of various concepts should be "taught in rich environments which stimulate children's imagination and thought and foster their desire to communicate" (EDC, 1969, p. 5).

EDC has identified some of the characteristics of a classroom for young children in which good learning, as they define it, is likely to occur.

1. There is a rich environment of materials for children to explore, and there are abundant opportunities for learning through experience.

2. Children's responses to the environment provide many of the starting points for learning. Activities most often arise from the needs and interests of the group rather than from

a prescribed curriculum. When commercial materials and programs are used, they must be made available in ways that protect the children's responsibility for their own learning.

3. With guidance from the teacher the children plan their own activities drawing from a range of relevant choices.

4. Each child is free to explore an interest deeply and is also free to disengage when an activity no longer seems appropriate.

5. Typically, there is a variety of activities going on simultaneously, each child working in ways best suited to his interests, talents, and style.

6. There are few obvious barriers between subjects, and much of the children's work is, in fact, interdisciplinary.

7. There is minimum dictation by the clock. A flexible schedule permits children to learn according to their individual rhythms of engagement and disengagement.

8. The children talk with each other about their work and often work together. Their learning is frequently a cooperative enterprise marked by dialogue.

9. All forms of expressive representation--in the arts and in movement as well as in language--are considered valid and important.

10. Groupings are not based on fixed criteria such as I.Q. or reading level, but are kept flexible, shifting with the changing needs and interests of the children.

11. The teacher serves in a supportive rather than a didactic role, guiding the children, provisioning and structuring the environment. She is both a sensitive observer of and an active participant in the life of the classroom (EDC, 1969, pp. 6-7).

Within such an environment the curriculum is then structured to meet certain educational aims, phrased here as questions:

Do the children initiate activities? Are they self-directing? Do they take responsibility for their own learning?

Are they capable of intense involvement? Does their curiosity often lead to concern, and beyond concern to commitment?

> Do they continue to wonder and to imagine, and do they bring their sense of humor into the classroom?
>
> Are they willing to face uncertainty and change, and to tackle complexities that they have not been taught how to manage? Are they unafraid of being wrong?
>
> Do they challenge ideas for the purpose of reaching deeper understandings? Are they open and honest with themselves, with adults, and with each other?
>
> Do they respect themselves, others, and the environment? Are they learning responsibility as an integral part of freedom? (EDC, 1969, p. 6).

With these objectives and learning environment in mind, EDC systematically disseminates materials to lend support. There are over 20 films and approximately 30 publications available on the open education approach from the EDC Publications Office.

The EDC instructional system requires teachers who are willing to be flexible and experiment. Teachers must first of all be investigators of their students, diagnosing their strengths and weaknesses, making decisions appropriate to the individual growth of their students. Second, the teachers themselves must have the opportunity to continue their own learning. In other words, the open environment instructional system enables teachers and children to collaborate in learning. Administrators should also be receptive to change, experimentation, and the overall philosophy of the program. The EDC instructional system depends upon the climate of the situation and requires flexibility at all levels.

Delivery, Installation, and Maintenance

The EDC Advisory Service helps school systems establish and maintain the open educational environment. The Advisory helps teachers

and administrators assess their own situations and take appropriate steps toward more open and flexible forms of education. The role of the Advisory, however, is not to supervise. Rather it evaluates each situation in relation to how it is changing and encourages teachers and schools to develop self-evaluation methods suitable to their own goals.

The Advisory staff engages in a number of activities including:

1. Conducting orientation courses for teachers and administrators in the philosophy of the open classroom and in techniques for making it work.

2. Visiting classrooms on a regular basis (currently four advisor-days per month at each site, the advisors working in pairs).

3. Conducting teacher workshops in reading, mathematics, science, and art within the context of the open education classroom.

4. Conducting informal teacher seminars dealing with various aspects of children's learning and with problems of classroom organization and procedure.

5. Conducting seminars for teacher-aides and community helpers.

6. Conducting evening programs for parents, including film and slide presentations, and classroom workshops in which the parents have a chance to explore, understand and contribute to the learning materials available for their children.

7. Arranging for outside consultant services in response to specific needs and requests.

8. Carrying on a continuing dialogue with individual teachers about their own situations, working out with each one some appropriate next steps for the development of her classroom.

9. Writing letters to teachers as follow-up to oral discussions. Such letters typically contain suggestions custom-tailored to individual needs and capabilities.

10. Providing books, pamphlets, and articles in response to general need and as part of continuing in-service education.

11. Providing special curriculum materials on a custom-tailored basis.

12. Providing assistance to teachers in securing free and inexpensive materials to enrich the classroom environment.

13. Developing learning materials, often in response to particular classroom needs, and often from ideas that originate in the classroom.

14. Developing prototypes of various kinds of instructional equipment and attempting to arrange for their replication in quantities needed for classroom use.

15. Providing the facilities of a design laboratory so that a teacher's promising idea for a piece of classroom equipment can be developed.

16. Trying to arrange for adequate discretionary funds to be made available to teachers, so that small purchases of materials can be made in response to needs as they arise. A teacher should not need to pay for the "extras" out of her own pocket, since these "extras" are so often essential.

17. Arranging for teachers to visit each other's classes, both within and between school systems.

18. Developing a communications system based on printed material: for example, classroom vignettes of children's learning; brief commentaries on the use of learning materials; monographs dealing with learning and curriculum; and extracts from worthy books and articles on education.

19. Trying to find out from the appropriate school administrators why certain classroom materials might not have been ordered or, if ordered, why not delivered.

20. Maintaining communication with appropriate administrators, bringing to their attention ways in which they can lend further support to teachers and to the program in general (EDC, 1969, pp. 9-11).

The job, then, of the Advisory staff is to respond to the demands of the particular situation in four different but interrelated functions: direct services, research and development, workshop and resources, and communications.

Information regarding any of the EDC services may be obtained from:

George Hein
EDC Open Education Advisory
55 Chapel Street
Newton, Massachusetts 02160
(617) 969-7100 ext. 521

Evaluation

Consistent with its educational philosophy, EDC conceives of evaluation as something done within the school by the participants as opposed to outside evaluation conducted by an outside agency. As a consequence of this philosophical and pedagogical position, evaluation is intricately tied in with staff development and program planning.

In its essentials the evaluation consists primarily of detailed descriptions of children and of the classroom by observers who include teachers and teacher aides. Because observation is so important, it is imperative that the observer be knowledgeable about child development. In short, "good" record keeping depends upon accurate and significant observation.

Classroom evaluation consists of individual records of the child in terms of his skill development, interest tendencies, and classroom activities. Inasmuch as the curriculum evolves after the fact rather than before the fact, the record of classroom activities becomes a description of the curriculum.

Other aspects of the program are evaluated with similar records. Of special interest is the kind and degrees of parent and community involvement.

At the present time the school based evaluation system is in the

process of development. It is anticipated that the system will be operative at least by September 1973. Although the evaluation mechanism will become an integral part of the overall program, its absence does not preclude the immediate implementation of the EDC approach with the aid of the EDC Advisory Committee.

BILINGUAL EDUCATION

Chapter 3

BILINGUAL EARLY CHILDHOOD PROGRAM (SEDL)

Program Foundations and Descriptors

The Bilingual Early Childhood Program is a three year sequence of instruction designed for Spanish speaking children from economically disadvantaged families. It was developed by and is available from the Southwest Educational Development Laboratory (SEDL). The program was first implemented in 1968 at two sites: The Good Samaritan Center in San Antonio, Texas, and the Texas Migrant Educational Development Center in McAllen, Texas. The Southwest Educational Development Laboratory, the Good Samaritan Center, and the National Institute of Mental Health cooperatively endeavored to structure the program to provide a wide range of preschool learning experiences for children, ranging in age from three to five years.

As a program designed for Spanish speaking children, the objective is to build up the child's first language, and then systematically introduce the same or similar concepts in English. Initial instruction is about 80 per cent in Spanish. Toward the end of the year, instruction is predominantly in English. In all its aspects, the program moves sequentially from that which the child knows and is familiar with to what he does not know. Through a careful sequencing of learning activities, the child is able to relate new learnings to previous experiences, thus fostering further learning.

The SEDL Bilingual Program is concerned with the sequential development of the child's cognitive skills, psychomotor ability, and emotional structure. Nine types of lessons are taught through three successive levels. The types of lessons are visual, auditory, motor, ideas and concepts, syntax of English, building vocabulary, prewriting, thinking and reasoning, exploring and discovering. Children may begin the program at age three and move successively through Levels I, II, and III over a three year span; or they may enter at four years of age and complete Levels II and III. The concepts and learning experiences of Level I are reviewed in the Level II program. Because of the overlap, children who have completed Level I may cover the materials of Level II at a faster rate than those new to the program.

Structuring activities to match the information and skills of the child is one of the primary objectives of the program. It is believed that such an approach will lead to successful and enjoyable learning experiences. Gaining more competencies, exploring further interests, and increasing social skills are encouraged, with the hope that the child will incorporate these aspects of growth and learning into a system of intelligent behavior.

The rationale for the program stems from the belief that children from economically deprived homes are often totally unfamiliar with many experiences which are commonplace for more advantaged children. As a result, the physical, social, and intellectual development of the disadvantaged child may be hampered, delayed, or retarded permanently (SEDL, 1969). Lack of stimulation and of the opportunities afforded to middle

class children is also seen as related to the disadvantaged child's deficit in perceptual skills, i.e., auditory, visual, and vocal. It is believed that these deficiencies impair the child's use of both oral and written language. The SEDL Bilingual Program aims to remedy these deficits and to prepare children for school activities.

Furthermore, the program seeks to enhance a child's concept of himself. "If he [the child] does not have confidence in his own ability to succeed, he will not try to meet the challenges that confront him in school and throughout his later years" (SEDL, 1969, pp. 6-7). Thus, opportunities are given to the child to succeed in many things, while attempts are made to provoke curiosity, exploration, and challenge. "A confident child is better able to learn and develop to his full potential than the child who has no confidence in his ability to master any task" (SEDL, 1969, p. 6). Such learning also includes the development of motor skills essential to school success, good health habits, and social skills.

The Bilingual Early Childhood Program often varies in emphasis, methddology, and content, but its primary objective is to "overcome the disadvantages faced by the preschool children of low socioeconomic circumstances and Mexican American origin" (SEDL, 1969, pp. 6-7).

Instructional System

The instructional system of the Bilingual Early Childhood Program has four general objectives. These are: "to develop the child's sensory-perceptual skills, to develop the child's language skills in both English and Spanish, to develop the child's thinking and reasoning

abilities, and to assist the child in developing a positive self-concept" ("Bilingual Early Childhood Program," p. 7). The program's curriculum is laid out in a teacher's manual and detailed curriculum guide, that provides descriptions of the sequenced lessons, the activities, and the behavioral objectives to be achieved.

Nine types of lessons are taught during the three different levels of the program. Four types of lessons occur at all levels of the program: visual, auditory, motor, and ideas and concepts. Two additional types are introduced at Level II: syntax of English and building vocabulary. Three further lesson types are included at Level III: prewriting, thinking and reasoning, and exploring and discovering.

Table 1

SEDL Lesson Types

Level I	Level II	Level III
Visual	Visual	Visual
Auditory	Auditory	Auditory
Motor	Motor	Motor
Ideas & Concepts	Ideas & Concepts	Ideas & Concepts
	Syntax of English	Syntax of English
	Building Vocabulary	Building Vocabulary
		Prewriting
		Thinking & Reasoning
		Exploring & Discovering

Curriculum units are organized around content themes that are meaningful to the child's background. Topics include clothing, food, animals, the natural environment, the community environment, and self-awareness. Each curriculum unit incorporates a variety of individual lesson types, in order to lead the child gradually from simple visual tasks to complex thinking and abstraction. The individual lessons are designed to complement and reinforce one another.

Lessons in the SEDL Bilingual Program are usually presented to small groups of children, while other class members work on individually assigned tasks. Generally, each lesson is taught four times. During the early periods of Level I the lessons are primarily taught in the dominant language of the children--that is, Spanish. By the time the child reaches Level III most of the instruction is in English. Whether to teach a lesson in Spanish or English is usually left up to the individual teacher. If the group is quite heterogeneous, the teacher may choose to teach one group in Spanish and another in English. The following sections discuss the purpose and the rationale of each lesson type.

Visual Training Lessons

The general goal of the Visual Training Program (VTP), like that of the other lessons in the Bilingual Early Childhood Program, is to develop skills which are important for later school success and general intellectual functioning. More specifically, the VTP is intended "to develop the child's total visual-motor functioning as it relates to perception and concept development" (SEDL, 1971a). Three operations are considered necessary to the child's visual-motor activity. These are: understanding what is seen; associating what is seen in the abstract; and, expressing what is seen by gesture or verbalization. Essentially, the VTP is designed to enable the child to "see" what he is shown and to reach certain conclusions as a result of his observations. For example, younger children are taught to discriminate such things as the size, color, shape, or texture of blocks, and to make appropriate categorizations. Finer discriminations are emphasized for older children.

Five general skills are necessary for visual-motor functioning: (1) perceiving position in space, (2) eye-hand coordination, (3) figure-ground perception, (4) perceptual form constancy, and (5) analyzing spatial relations (SEDL, 1971a). The development of these skills is integral to the visual training lessons, and, as a result, the VTP employs five types of visual lessons. SEDL, 1971a, p. 16 lists the five types of lessons and explains the nature of each.

1. Association of three-dimensional objects with two-dimensional representations. In these lessons the child associates concrete objects with pictures of the objects or pictures of similar objects. At higher levels these lessons become more schematic; e.g., the child must associate a box with a picture of a square.

2. Discrimination of visual constancies. The child recognizes the relationship between different representations of the same object or similar objects.

3. Spatial relationships. In these lessons the child recognizes an object when it is placed in different spatial positions (right side up, up side down, pointing to the left, pointing to the right).

4. Part-whole relationships. The child attends to part of an object and deals with it as a unit separate from the whole. Also, when he sees part of an object, he is able to name the whole with which it is associated.

5. Visual memory. In these lessons the child attends to a visual stimulus and remembers it so that he can identify or reproduce it later.

Auditory Training Lessons

A number of research findings provide the rationale for the Bilingual Auditory Training Program. SEDL (1971a) states that most of a student's learning is accomplished by listening. Listening and the ability to discriminate differences among complex sounds is necessary to normal language development. Language skills are considered essential to the

child's academic achievement. Development of auditory discrimination is said to be related to a child's progress in writing and reading as well as speech. With these points in mind, the primary objective of the Auditory Training lessons is to teaching children to "learn to listen."

The problem of listening is particularly important in the educational process of the Spanish speaking disadvantaged child (SEDL, 1971a). This stems from "a generally inadequate communication process in the disadvantaged home " (SEDL, 1971a). Researchers of the bilingual program feel that these factors, coupled with a Spanish background, give rise to a multiplicity of academic problems. They believe that the speech patterns and language concepts of Spanish interfere with the correct speaking of English.

Auditory lessons are intended to teach children to perceive, remember, and reproduce sound sequences (SEDL, 1971a). More specifically, the child learns to discriminate sounds, perceive rhythm patterns, memorize and repeat sound patterns, isolate and employ relevant sounds and disregard others, and use sounds in language to solve problems. Inflections and intonation patterns are also emphasized. For these reasons there are three major types of auditory lessons: (1) listening to environmental sounds, (2) language patterns, and (3) basic listening skills.

Motor Training Lessons

The Motor Training Program is based upon the notion that "postural skills are essential preparation for the development of more refined skills in later years" (SEDL, 1971a). Research evidence is cited which suggests that if a child does not have an internal awareness of the left, midpoint,

and right of his body he cannot project "leftness" and "rightness" to the outside world. The same hypothesis is held for internal awareness of the vertical dimension. Such problems may be related to a child's difficulty to perceive a difference between "b" and "d," for example. "Internal awareness" is of importance, because a child who can label "left" and "right" has not necessarily developed the actual concepts. In essence, the Motor Training Program is structured "to detect possible motor deficiencies and to provide experiences needed to develop adequate motor skills for later academic achievement" (SEDL, 1971a).

The specified training lessons may be adaptable to the conditions of a particular site. At San Antonio, for example, the children were not found to be deficient in gross motor skills. This was determined by the administration of a gross motor checklist, developed by SEDL. As a result, the motor program for the Good Samaritan Center Preschool Program emphasized gross motor skills only when they related directly to abilities considered to be basic to higher levels of academic achievement.

Ideas and Concepts Lessons

The Ideas and Concepts Program employs lessons designed to introduce certain concepts, the ideas related to those concepts, and the skills related to the application of them. Activities include such skills as labeling in Spanish and English, classifying learned concepts, developing the rules of categorization, and learning the parts and functions of various objects. The lessons are directly related to a unit theme (e.g., clothing, animals, transportation), in order that the child may develop a category rule to identify examples of the concept he has learned.

The Ideas and Concepts Program begins by training the child to understand and to produce simple language forms. As these skills develop, the child is expected to gain ability in language comprehension and to produce more elaborate language forms. Gradually, the child moves toward the description of objects, the narration of events, generalizations, explanation and prediction of various ideas related to these objects and/or events. The child also learns to communicate with himself and others through discussions, fantasy, and dramatic play. SEDL (1971a) explains the more long range goal of the Ideas and Concepts component.

> Hopefully, each child will be able to classify problems, think flexibly in order to see several possible solutions to a problem, evaluate various alternative actions, and recognize when a problem has been solved (p. 107).

Syntax of English Lessons

Lessons on the Syntax of English are closely related to the previously discussed Ideas and Concepts lessons as well as Building Vocabulary. However, the Syntax lessons emphasize basic language patterns, rather than particular words or phrases. Emphasis is also given to encouraging the children to speak for themselves.

Basic language development involves several factors. One of these is a knowledge of the language "rules." That is, "the underlying patterns in the way the sounds, words, and sentences are put together, in the way sentence elements are selected and arranged to form meaningful units" (SEDL, 1971a). For example, in English, the sound combinations (pl), (bl), (gl), and (cl) do occur (as in place, black, glass, and clay). But such combinations as (tl) and (dl) do not appear in English, even though they occur in many other languages. Such a rule involves the grammatical system (syntax).

Another example has to do with word sequences. "He is very tired" is correct; not "is very he tired." The grammatical rules of English do not include such a sequence. Thus, it becomes an objective of the syntax program to learn and use such rules.

The next step is to "internalize" these rules. The rules should be used automatically without conscious thought. They should be internalized as a "system." In other words, the child should possess the set of phonological, syntactic, and semantic possibilities that govern his speaking and comprehension of the language. It is the possession of this "system" that enables him to formulate and comprehend sentences which have never been used or heard before. When this occurs the child is said to "know the language."

The lessons of the Syntax component control the language data presented to the child in three ways: (1) items [rules] are taught which are general and basic, and which constitute the fundamental framework of English, (2) the selected items are sequentially arranged so that each new rule is integrated and related with those previously learned, and (3) the number of new rules taught in each lesson is carefully limited so that the child can gain complete control of those rules and can organize his learning systematically.

The Syntax lessons may be considered to have two related parts: development of the child's capacity to express meanings in English; and the use of those expressed meanings in the development of intellectual concepts. As a result, the child is either focused on gaining control of English expression or gaining control of content, but he is not required to cope with expression and content at the same time.

An important goal of the program is to get the children to speak and think in both Spanish and English. Research suggests that this is best accomplished if the children hear the languages used separately rather than mixed. Therefore, it is recommended that the lessons be taught either in English or Spanish with as little switching as possible. However, in some cases it is advisable to switch languages for clarity of concepts.

Vocabulary Lessons

The building of vocabulary components complements the Syntax of English component. The primary thrust of the Vocabulary Training is obviously to increase the child's familiarity with words. This component teaches the words needed for lessons in the other components and introduces words relevant to the theme of the unit under study. Words are also introduced that are frequently used and needed in social interaction and/or the school setting. Most of the vocabulary building is done through songs, games, and other informal group activities, rather than through formal lessons.

Prewriting Lessons

Building on the skills taught in Motor Training, the Prewriting component prepares the children for writing and other pencil activities which they will encounter in the first grade. The children are first taught to make the basic line forms used in writing letters and numbers. Later they actually form the letters and numbers. Early lessons involve making large lines on the chalkboard. As the children's skills increase, they are moved to pencil and paper activities of gradually increasing difficulty.

By the end of Level III, the children are expected to print letters and numbers, including those letters which appear in the Spanish alphabet.

Thinking and Reasoning Training Lessons

The Thinking and Reasoning component is designed to develop the abilities necessary for problem solving, as well as those skills needed in actually finding solutions to problems. Seven classes of abilities are seen as underlying problem solving. SEDL (1971a, pp. 112-113) lists and explains these abilities.

A. Fluency: the ability to generate responses (in this case, verbal responses) with ease and speed. For example, the children construct a list of as many kinds of animals as they can within a short time.

B. Flexibility: the ability to change set, to see old things in new ways, to use familiar objects in unusual ways, to find unusual solutions to problems. For example, the child thinks of as many novel ways as he can to use a tin can.

C. Analytic Description: the ability to describe events, people, objects, feelings, using a precise, analytic vocabulary. For example, a child describes as fully as he can a fire truck. Questions of interest would be "Did he use attributes, like color, size and shape? Did he describe functions and uses? Did he describe parts? Did he use various classificatory categories in his description (it's a vehicle)?"

D. Sequencing: abilities involved in generating and describing various kinds of temporal and logical sequences. For example, a child places a series of rods in order from tallest to shortest. Or he describes in order the various steps which must be taken to arrive at a certain result.

E. Separating Relevant from Irrelevant: the ability to isolate or focus on conditions or events which are significantly related to one another and to separate them from the merely accidental. For example, the child decides that oil on the highway might have contributed to an accident, but that three large birds sitting in a nearby tree probably did not.

F. Causal Reasoning: the ability to relate given outcomes to specific causes, to predict outcomes given certain conditions, to provide explanations for causes and effects. Most how and why questions (not regarding human motivation) call for causal reasoning. For example, "How does a car work?" "Why did the bird die?"

G. Logical Operations: abilities involved in the various logical operations such as inclusion-exclusion, conditionality, inference, deduction, negation, etc. For example, the child is told that all objects in a set were taken away. The question "How many were left?" calls for a logical inference.

Problem solving refers to "the process or processes by which a person discovers or creates some way to surmount a barrier or to handle a difficulty in order to attain a certain result or goal" (SEDL, 1971a). The emphasis of the instruction is upon teaching the children skills that can be applied to novel situations, rather than teaching children how to solve particular problems. In other words, stress is placed on the thinking process, not on the content or product. For example, the child who answers incorrectly, but thoughtfully, is said to be doing better than the child who guesses correctly. SEDL (1971a) gives an example of how a teacher may encourage the thoughtful child. "Rafael is thinking today. He thinks if we do this, then it will open. Let's see if that will work. Well, that was a good thought, Rafael, but it didn't work, did it?" Thus, it is important to structure activities which require the child to recognize the situation as a problem, think of alternative solutions, and evaluate those solutions. This does not imply that problems should necessarily be very difficult. Instead, the intent is to teach the process of problem solving. It is important to accept and credit all relevant responses from the children, and at the same time to remind them of certain constraints in the

situation. The Thinking and Reasoning component aims to teach children a problem solving process which can be extended not only to other school situations but to all activities in their lives.

Exploring and Discovering Training Lessons

These lessons are intended to help the child develop basic mathematical and scientific concepts. Most of the concepts of this component are touched upon in the Visual Training and Ideas and Concepts lessons, but when a child reaches Level III, he is considered to be ready for more in depth and systematic presentations.

Memorization without understanding is reduced by the fact that the child discovers scientific and mathematical concepts for himself. The teacher coaches and/or guides at appropriate moments, but her function is to assist the child in coming to his own discoveries and understandings. A more general objective of these activities is to encourage the use of the concepts, skills, and processes of exploration and discovery in other independent learning situations, particularly as related to science and mathematics.

Format of the Lessons

The lessons of the SEDL Bilingual Program, as they are spelled out in the curriculum manual, follow a basic format. Because of the limited attention span of preschool children, lessons are short. When problems arise, such as the lesson dragging or children becoming disinterested, lessons are broken up and scheduled during extra or remedial sessions. Most of the lessons are intended for small group presentations, and are usually presented four times.

Each lesson has several basic elements. The first is the behavioral objective, i.e., that which the child should be able to do after he completes the lesson. SEDL (1971a) explains the nature of the behavioral objective.

> The objective is stated in very specific behavioral terms so that it will be easily and clearly understood. It is stated in two parts. The first, or conditions, part tells what you as the teacher must do and say to the child. Thus, the conditions statement will tell you to demonstrate or show something to the child and will give you the words to use in asking him to do something or to say something. The second, or behavior, part tells what the child is then to do. This behavior part tells exactly what the child must say or be able to do in order to meet the behavioral objective of the lesson (p. 31).

The sequential manner of presentation of curricular content and of the format for testing is based on the behavioral objectives of the lessons. Lessons are written on the assumption that the child can meet all of the behavioral objectives from earlier lessons. If this is not the case, remedial work may be necessary. Unit tests are included as a part of the program, to aid in the prevention of jumping ahead of the children. Each lesson also contains a purpose statement which is designed to help the teacher relate the lesson to other aspects of the program. The purpose statement tells in general language how the lesson is intended to help the child.

Because the teacher often needs to secure various materials, a materials section is included, listing all of the materials necessary for the instruction of the lesson. The information about materials is presented in two parts: a list, and instructions about any advance preparation of the materials that may be required. (More complete information is found in the SEDL Teacher's Manual.)

Precautions are included to prevent misinterpretation of the instructions or ways the teacher may avoid unnecessary difficulties. For example, if a sentence on the blackboard is to be completed by a child, the precaution may remind the teacher to write the incomplete sentence near the bottom of the board so that the child will be able to reach it.

Special instructions gives the teacher such information as the size of the group that should be taught in a particular lesson, seating arrangements, or other instructions the teacher should follow before beginning the lesson (other than preparing materials).

These five sections are found on the first page of each lesson in the curriculum guide. All of the sections deal with those things which the teacher needs to prepare or think about before beginning to teach.

Instructions for presenting the lesson are given in a section on procedures. The procedure section is made up of several subsections. The first is the introduction which is designed to motivate and generally acquaint the children with what will be taught. In short, the introduction mentally prepares the children for the coming lesson.

After the children are mentally ready and are giving the teacher their attention, the lesson begins with a demonstration. Here the teacher describes what she is doing while performing the various teaching acts. The purpose here is to give directions so that the children will understand what they are to do later.

The interaction subsection engages the children in verbal and/or physical interaction with the teacher and/or among themselves. During this time, the teacher gives each child an opportunity to practice the lessons's objective, and she may give remedial teaching to those who need it.

interaction often begins with the children being asked to give simple responses as they perform various activities.

The lesson is then brought to a conclusion. After the children have met the behavior objective (or after the teacher decides to stop and remediate later with some of the children), a summary is given of the learning experience. This summary and conclusion helps the child remember what has been taught and puts it in proper perspective. Selected sample lessons are found in the Appendix.

Related Activities

SEDL uses related activities to supplement and enrich the planned curriculum. The number of such activities used in the program depends upon the length of the school day, the number of children involved, and how quickly the children are able to meet the various behavioral objectives of the defined program. The enrichment activities include art, music, games, story time, discussions, movies, field trips, dances, special lessons, and show-and-tell. Planning of related activities should be done with specific educational goals in mind, and should be used to make the curriculum more meaningful to children.

Independent activities, in which the children work on their own, are considered to be an integral part of the program. Because the children work in small groups, independent work is important from an organizational standpoint. These activities provide children with an opportunity to actively manipulate their environments and to reinforce the learnings acquired during the lessons.

Testing and Remedial Teaching

Testing is a basic part of the SEDL Bilingual Program. It provides a way of systematically checking the children's learning and planning for remedial teaching.

Three types of tests are given: (1) general tests of language and problem solving abilities, (2) unit tests, and (3) mastery tests. The general language and problem solving tests are designed to measure the children's language development (in Spanish and English), their knowledge of certain basic concepts, and their ability to solve problems. The information from these tests is useful in grouping children at the beginning of the year. The unit and mastery tests are directly related to the behavioral objectives of the curriculum. Unit tests are given at the end of each unit. The results of unit tests give general information about the teacher's success in teaching the unit, the progress of the children, and individual differences among the children. Mastery tests are given four times a year, and they examine the children's learning over several units. A more complete explication of the various tests and their uses can be found in the SEDL booklets Testing the Children and Planning and Teaching Units.

Suggested Teacher Attitudes and Expectations

Six teaching attitudes and expectations are identified as essential to the instructional system of the SEDL Bilingual Early Childhood Program: (1)"Skill acquisition is the major goal of the program, and direct instruction is a major responsibility of the teacher," (2) "Teachers must genuinely and seriously expect all children to meet at least the minimal program objectives," (3) "Teachers must understand that the vital aspects

of teaching are instruction, diagnosis, and remediation, rather than giving directions and evaluations," (4) "Teachers must ask real questions, expect answers, and respond appropriately," (5) "Teachers must expect to talk to and with children, not merely at them," (6) "Teachers must realize that the children will find skill acquisition inherently and rewarding when the teacher praises appropriately" (SEDL, 1971c, pp. 22-32).

The six essential teaching attitudes and expectations are more fully explicated in the SEDL booklet Teacher Expectations (1971c). The basis of these prescriptions is rooted in the notion of a "self-fulfilling prophecy." That is, teacher expectations of students may foster teacher behaviors which will lead to the realization of those expectations. For example, if a teacher expects a child to achieve well, she may sometimes unknowingly manifest behaviors, such as praise and encouragement or extra attention, that will lead the child to academic success. In the SEDL Bilingual Program, teachers are encouraged to expect all children to acquire the desired skills. Teachers should also project enthusiasm and give personal contact to the children. It is believed that teachers who exhibit these behaviors, coupled with confidence and realistic expectations, will be effective.

More specifically, the teacher's role is one of a learning facilitator. Nine "events of instruction" are included in the curriculum materials. These "events of instruction" serve as a guide to the teacher's function:

a. Gaining and controlling attention

b. Informing the child of expected outcomes

c. Stimulating the recall of relevant prerequisite concepts

d. Presenting the learning materials

e. Offering guidance for learning

f. Providing feedback

g. Appraising performance

h. Making provisions for transferring and generalizing learning

i. Insuring retention of what is learned (SEDL, 1972a, p. 2).

These nine categories of teacher behavior are accomplished as a lesson takes place. The first two, gaining attention and informing children about expected outcomes, are built into the introduction of each lesson. During the demonstration of a lesson, the teacher covers points (c), (d), and (e). The teacher further guides the learning (e) and provides feedback (f) and appraises the performance of the children (g) during the interaction phase. Transfer and generalization of the learning and retention (h and i) is done in two major ways: (1) independent work and related activities, and (2) organization and coordination of instruction into units with a common theme. More detailed descriptions of the teacher's role and function may be found in SEDL manuals (1971c, 1971d, 1972a, 1972b).

Staff

Each class is under the direction of a supervising teacher and an assistant teacher who share the responsibilities for teaching and classroom management. The program is meant to be taught by a pair of teachers working as a team--not by a single teacher receiving only marginal help from an assistant. The supervising teacher is responsible for planning, making decisions, and seeing that such plans and decisions are carried out.

She is also responsible for training the assistant teacher and making sure that the assistant understands what, how, and why a particular lesson is to be taught. With training, the assistant teacher gradually takes a more and more active role and makes increasingly important contributions.

Most typically, the supervising teacher teaches the lessons on ideas and concepts and thinking and reasoning because of their complex nature. She also administers all mastery tests. The assistant teacher may teach many of the other lessons, depending upon the judgment of the supervising teacher and the ability of the assistant. Usually, visual lessons are taught by the assistant; she may also teach the motor and auditory lessons and take responsibility for independent work, equipment demonstrations, enrichment activities, etc.

Scheduling

SEDL suggests certain principles which are necessary for the effective execution of the Bilingual curriculum. These include behavior principles, which are related to the behavior patterns of the children at particular times of the day, and program principles which are related to the objectives of the SEDL Bilingual Program. SEDL (1971b, pp. 69-71) states:

Behavioral Objectives:

1. Young children usually can concentrate on a lesson for only 15 to 30 minutes before getting restless. Therefore, lessons demanding high concentration should be alternated with less demanding activities. This will prevent undue demands on

the children's attention spans. Try to arrange your schedule so that activities such as independent work, art, music, story, rest, snack, mealtime, toileting, and outside play are scheduled in between lessons. You, of course, will be teaching lessons more or less continually, but the children will rotate between lessons and other activities.

2. Children attend to demanding cognitive tasks (e.g., thinking and reasoning, language, etc.) more easily early in the day, so these activities, whenever possible, should be scheduled early in the day. Independent activities are also scheduled at this time to provide a break between lessons. Equipment involving both easy and difficult cognitive tasks should be available for independent work so that the child may choose according to his level of desire for concentration.
3. Routine situations such as snack, rest, toilet, and mealtime should be scheduled to correspond with the physical needs of the particular group.
4. Activities requiring a great deal of physical action should be scheduled towards the end of the day when the children tend not to concentrate as well (certain motor lessons, for example, as well as active games might be scheduled at this time).
5. Activities requiring less physical action (e.g., independent work) should be scheduled early in the day and alternated with the more cognitively demanding lessons. This will help

maintain an atmosphere of quiet work while at the same time providing a break from high concentration periods.

Program Principles:

1. Alternate teacher-directed work with child-directed work. For example, independent work is a child-directed activity used as a buffer between the teacher-directed visual and language lessons.
2. Alternate group and individual activities.
3. Each child should have the opprotunity to interact with an adult as often as possible (rather than working with his peers or working alone).
4. Time periods for each activity must be appropriate to meet the learning objective and to maintain the interest of the child.

Delivery, Installation, and Maintenance

Setting up a Bilingual Early Childhood Program involves the operationalization of four basic components--instructional materials, staff development, parent education, and the environment for learning. Assistance is provided by the Southwest Educational Development Laboratory in the form of preservice summer workshops and inservice training meetings throughout the year. Numerous materials are also supplied to potential users, which fully explicate the operation and philosophical orientation of the program. The instructional materials, like the staff oriented materials, are fully developed products and available for use. A sample of the materials

available from SEDL that is a part of the complete package program is included in the Appendix.

The Program has undergone many revisions since 1968. However, a description of one of the original bilingual sites is given here to give the reader an idea of what the program operations may entail.

It should be pointed out the programs often vary considerably in personnel, cost requirements, and other things. The program at San Antonio was funded as a Head Start program by the Office of Economic Opportunity. More complete, up-to-date information regarding the specifics of program operations is available from SEDL.

San Antonio, Texas--1968-1969

The center at San Antonio served fourteen five-year-olds, sixteen four-year-olds, and sixteen three-year-olds. All of the subjects have lived in an area southwest of downtown San Antonio for at least two years. Approximately 25 per cent of the children lived in public housing.

A key goal of the program was to develop the children's competencies in both English and Spanish. The instructional methodology basically followed that which has been set forth here under Instructional Systems.

Three classrooms were used, one for each age group. The facilities were housed on the premises of the Good Samaritan Center. The teachers, aides, design staff, and secretarial staff used four offices equipped with desks. A library of children's books, supplemented with a record library, was also used at the Center. Two pianos and two record players were located in the classrooms, and two tape recorders and an automatic slide projector were available for use when needed.

Breakfast and mid-morning snacks were served daily from the Center's kitchen. Other services included a social worker, who worked with children with problem behaviors, and a medical staff. In addition, a Parent Involvement program was organized. The Good Samaritan operated these services for all people in the neighborhood, and the pupils in the preschool program were able to take part in them.

The program personnel transported the children to and from the Center. When Parent Involvement meetings were held, transportation was also provided for those parents who needed it.

The staff was structured to develop curriculum, provide a favorable pupil-adult ratio, translate curriculum materials to meet the requirements of a bilingual program, encourage parent-community involvement, and adequately evaluate the program. Business and secretarial support services were also provided. Staff organization, educational level, and the work experience of the staff is shown in Table 2.

More complete descriptions of the San Antonio program, and other sites may be found in SEDL (1969). Yet, it should be remembered that each program is set up to meet the needs of a given location and population, and facilities, staffing, etc., may be substantially different from place to place. SEDL provides the services and materials necessary to adapt the Bilingual program to particular circumstances.

Evaluation

Several evaluative studies have been conducted to measure the effects of the program. One of these studies is briefly discussed here: the results of the 1968-69 study at San Antonio. The complete data and full description of the research methodology are found in SEDL (1969) and SEDL (1972b).

Table 2

Staffing Summary

Southwest Educational Development Laboratory		Director of the Good Samaritan Center, San Antonio	
SEDL Coordinator		Center Co-Director for Program	
Evaluation Specialists	2	Curriculum Design Writer	1
Teachers	3	Assistant Teachers	3
Secretarial Staff	2	Neighborhood Aides	2

Professional and Non-professional Personnel	Education Level					Years Experience		
	Less than H.S.Dip.	H.S. Dip.	Less than College Degree	Under-grad Degree	M.A. Degree	Less than 2	2-3	4 or more
Professional (8)			1*	4	3	3	2	2
Non-professional (7)	1	6				2	5	

* Assistant to the Psychologist for Evaluation

Reprinted from SEDL, 1969, pp. 17-18.

San Antonio

The 1968-69 evaluation program was intended to permit the testing of three basic hypotheses:

Hypothesis I

Children from educationally deprived homes will score below national norms on standardized test instruments which require the use of language in test administration.

Hypothesis II

Children from educationally deprived homes, when tested on standardized instruments which do not require language in the test administration, will score at or approximately at national norms for middle class children.

Hypothesis III

The Laboratory-planned Early Childhood Education System will raise the intellectual performance level, as measured by standardized instruments, of the impoverished Mexican-American child significantly more than will:

a. an indirect intervention in the child's development through the use of a structured Parent Involvement program, or

b. a direct intervention through a traditional nursery care program, as exemplified by the programs of selected San Antonio Day Care centers (SEDL, 1969, pp. 7-8).

Three groups of children were used as comparative samples. The first group (N = 16) of three-year-olds were engaged in a half-day program which emphasized cognitive and language development (T_1). The Parent-School-Community Involvement program (T_2) attempted to affect the behavior of the three-year-olds (N = 16) indirectly by modification of parental behavior. Three-year-olds (N = 14) at other day care centers made up the third group (T_3). At these day care centers there was more emphasis on simple care and free play.

Before the treatment, the pupils in T_1 were at a higher level of development than the other groups as measured by the Leiter International Performance Scale and the Spanish form of the Peabody Picture Vocabulary Test. Tables 3 and 4 and Figure 1 show the comparative pre- and posttest data on the three measures.

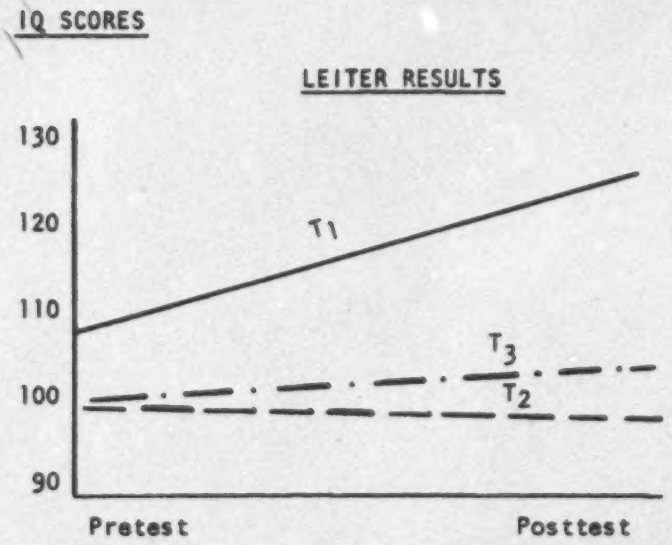
Table 3
Comparison of Groups Before Treatment

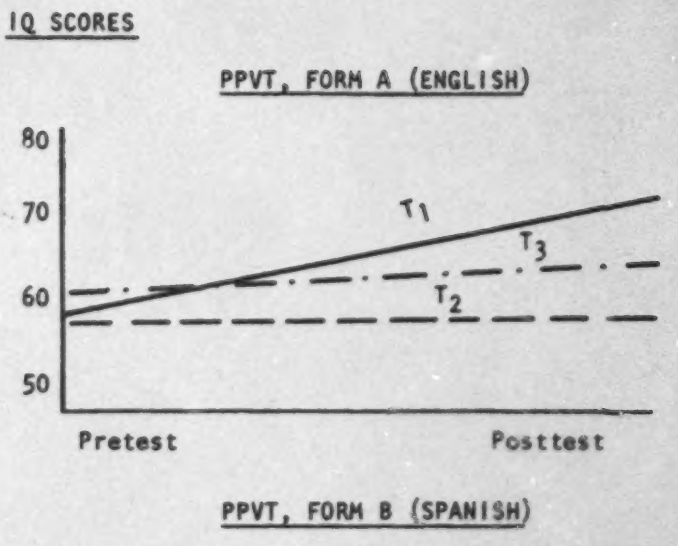
	T_1	T_2	T_3
Leiter (mean score)	107.06	97.15	99.09
Peabody (mean score)			
English	59.00	57.57	59.71
Spanish	87.63	74.50	76.07

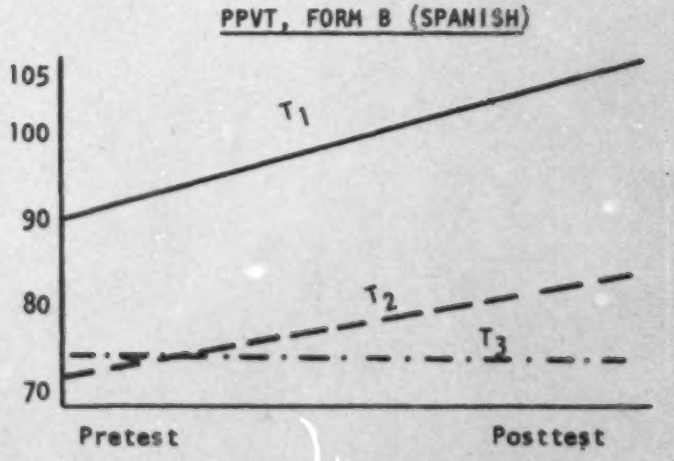
Table 4
Comparison of Posttest Results

	T_1	T_2	T_3
Leiter	102.69	96.31	101.36
Peabody			
English	69.19	57.57	62.59
Spanish	102.38	80.14	76.03

Central to the hypotheses of the evaluation study is the notion that the children from educationally deprived homes start school with definable handicaps. Hypothesis I is supported by the pretest data of this study. This is reflected by the scores on the PPVT. Hypothesis II is also supported. Scores on the Leiter are at or approximately at national norms (national norm for all tests is 100). Gain scores of T_1 were substantially greater than the other two groups, thus supporting Hypothesis III. Generally,







T_1--San Antonio Urban Education Development Experimentals

T_2--Children of parents involved in Parent involvement program component sponsored by SAUEDC staff

T_3--Day Care Center pupils

Figure 1. Pretest and Posttest Scores of Treatment Groups T_1, T_2, and T_3 on Three Developmental Measures. Reprinted from SEDL, 1969, p. 45.

the findings indicate that the Bilingual Program at San Antonio did raise the intellectual performance level of impoverished Mexican-American children significantly more than did the indirect intervention through the use of a structured Parent Involvement program or direct intervention through a traditional nursery care program in selected San Antonio Day Care centers. Other more recent evaluations employing more developmental measures have tended to yield similar results (e.g., SEDL, 1972b).

Chapter 4

THE ORAL LANGUAGE PROGRAM

Program Foundations and Descriptors

The Oral Language Program (OLP) is a complete program for teaching English to five- to seven-year-old non-English speaking children. It consists primarily of a set of detailed lesson guides for teacher and students. The program is the product of the Southwestern Cooperative Educational Laboratory, Inc. (SWCEL). It is based on a set of instructional materials for teaching English as a Second Language (ESL) developed at UCLA. The materials, known as Project H200, were developed under a grant from the United States Office of Education.

Reeback and Osterreich (1971) developers at SWCEL, set forth five basic assumptions which served as a rationale for developing the OLP:

1. Significant numbers of children in or approaching school cannot speak or understand English well enough to benefit from instructions carried on in it.

2. Explicit instructions in oral English can lead to sufficient acquisition of the language to facilitate learning in an English speaking school setting.

3. Such instruction can and should be carried out regularly, frequently, over a long period of time, i.e., months, if not years.

4. Teachers can conduct systematic instruction in oral English effectively.

5. A plausible and possible sequence of language instruction can be identified that may enable more successful learning than some other sequences (p. 3).

The OLP is primarily designed to assist Spanish speaking children. This is because Spanish makes up the largest single language community in the United States. Structuring the program around the Spanish language also allows for anticipation of syntactic and phonological content and for the sequencing necessary for Spanish speaking children. In spite of the program's orientation toward Spanish, it is possible to use it with children who speak other languages. The program has been applied to Navajo children and blacks as well as Spanish speaking children with varying degrees of success. With Navajo and Spanish children the program has fostered substantial oral English gains. However, present data seems to indicate that the OLP may not be appropriate for increasing the language skills of black children.

The OLP, as it is now structured, is a result of considerable research and numerous field trials. In the spring of 1967, SWCEL received a copy of the Project H200 Guide, containing one hundred forty seven ESL lessons to be taught over a one-year period. Beginning in the summer of the same year and extending through the 1967-68 school year, SWCEL conducted trials of the materials with Spanish speaking children and with Navajo children in preschool and first grade classes. From mid-February through June 1968, the Project H200 materials were revised and supplemented by the SWCEL staff. The outcome of these revisions became known as

the Mark I version of the Oral Language Program. The Mark I version was tested in about one hundred classrooms in various areas of the Southwest during the 1968-69 school year. Extensive reports from the field test sites and research in the laboratory school at SWCEL, which also tested the Mark I materials, led to further revisions. The second Mark II version of the OLP emerged in the spring of 1969. Mark II materials were then tested in about thirty-five classrooms during the 1969-70 school year. Results from these studies led to the preparation of the Mark III version of the OLP, which was tested in several sites in the 1970-71 school year. SWCEL does not consider the Mark III version to be perfected, but it will be subjected to only minimal revisions.

At present the OLP consists of one hundred forty-seven lessons, enough for one school year. The lessons deal entirely with the oral and auditory aspects of English. Consequently, there is no direct instruction in either the reading or writing of the language. This focus is based upon the belief that "fluency in a language is a prerequisite to facility in reading and writing that language" (Reeback, 1970a, p. 3).

Instruction is entirely in English. Monolingual instruction enhances the probability of using OLP with students from a variety of backgrounds. It is also easier to find teachers for the program, as most teachers are monolingual. On the other hand, monolingual instruction can sometimes constrain the program. Early lessons are necessarily very simple, dynamic, and active with little use of language. This means that effort is spent in getting meanings across instead of imparting more language structure and development.

OLP does not demand the banishment of the child's first language. SWCEL has made efforts to make the content of the lessons relevant to the local and ethnic backgrounds of the various populations that might receive the program. Children are taught that English can be used to speak about any topic, including those that the pupils may already speak about in their first language. To accomplish this, Cultural Heritage Review Units have been incorporated into the daily schedule of the program. These units select syntactic content, which shows contrasts between English and the language of the children. (The Cultural Heritage Review Units are further discussed in the Instructional Systems section.)

OLP carefully sequences and controls the language to be encountered by the child. Only a few linguistic structures are presented during any one phase of instruction, and the order of the presentation of these structures is carefully specified. SWCEL feels that such structuring of the program better enables the pupils "to put together environmental cues and strange new sounds and to come up with a grasp of what is being said and an ability to say it" (Reeback, 1970a, p. 4).

Only one style of English is taught in the lessons--an informal version of the standard dialect. Attempts are made in the OLP to encourage what may be called "natural utterances" and to relate these utterances to "real" situations. For example, the use of a complete sentence is not always appropriate. If a person fluent in English is asked, "What do you have?" he may answer "A book," instead of, "I have a book." Analogies may be made in most languages. Because one of the goals of the program is to make the learner aware that English is a real language, resembling

his own language in many respects, these informed and predictable language patterns are taught. When it is necessary to depart from natural utterances for instructional purposes, teachers are encouraged to make it clear to the children that they are engaging in a "language practicing" activity.

One of the overarching goals of the program is to increase the child's oral and auditory English skills. Several techniques are used to develop these skills. OLP lesson plans are generally designed for small group instruction, i.e., ten children as a maximum number. According to Reeback and Osterreich (1971), children are more likely to take part in speaking exercises when groups are limited in number. The more the child speaks, the greater the possibility for the teacher to assess his ability and to play the role of a supportive, encouraging, and correcting audience. Small group instruction also enables the children to play the roles of speakers to, and audiences for, other children. It is recommended that each teacher be assisted by a teacher aide, who can help with classroom management while the teacher is engaged in small group instruction. Small group instruction is discussed in more detail in the following section.

Another method to help children in their language learning task is the use of realia (objects, toys). The assumption is that children are more likely to speak when they are given something to speak about. The objects, toys, and pictures help build situations in which the children can apprehend concrete meanings from what they say and hear. For example, to learn the difference between "I have an apple" and "I need an apple," it is important for the child to see where the apple is, handle it at the right moments, and so on (Reeback, 1970). Various toys, puppets and

costumes, pictures, and real objects are used in OLP instruction.

Twenty teaching techniques, organized into five categories are also suggested for the purpose of improving the skills of the children:

1. Shaping and Maintaining Correct Responses--reinforcement.

2. Conventions--brief signals or gestures that let the children know what they are to do next.

3. Modeling--making an utterance that the children are to echo.

4. Correcting Errors.

5. Evoking Questions. More discussions of these techniques is found in Instructional Systems.

In summary, the OLP is a program designed for children from five to seven years old who do not speak English. The primary purpose is to prepare these children for instruction in English. The OLP is a monolingual program, emphasizing auditory and oral English. Instruction is primarily in small groups, using ample realia, and the principles of reinforcement, immediate feedback, and modeling.

Instructional System

OLP offers one hundred forty-seven explicit, step-by-step lesson plans, enough for one year of full time instruction. However, if a teacher only covers fifty or one hundred lessons, this is consistent with the intent of the program. Teachers are encouraged to move at a pace compatible with the learning abilities of the children. The lessons, each approximately twenty five minutes in length, are sequenced and divided into the areas of Structure and Pronunciation. The structural content of the lessons

progresses from the pronominal system, to increasing the number of verb tenses, to elaboration upon a few sentence types. Reeback (1970a) selects a few examples from the beginning, middle, and end of the one hundred forty-seven lessons to illustrate the structural content of OLP:

> In the first ten lessons occur utterances such as "What do you want?", "I want a ball", "I have an orange", "Do you have a pencil?", "No, I don't." In lessons roughly from 72 to 82, there are exchanges such as "Do you want some peanut butter on your cracker?" "Yes, I do", "Does Steve want some soup?" "No, he doesn't want any", "Do you like to dance?", "No, I don't. I like to run." Near the end of the year's program, in lessons 138 to [147], are found such utterances as "Which animal do you like?" "I like the dog", "Do you see a cat and a dog?" "I see a cat but not a dog", "What did she do?" "She brought me the book" (p. 5).

Skill in discriminating sounds as well as skill in articulation are emphasized in the Pronunciation sections of the lessons. Reeback (1970a) explains:

> Pronunciation content is based upon the points of the English sound system that seem most central and critical for speakers of a variety of languages to master. Some examples are English pitch and stress, the variety of syllable-final consonant articulations (e.g., compared to Spanish or Navajo), the complex relations between the kinds of final consonants and the length of preceding vowels, and the articulation of th (in the), and retroflex r (p. 5).

Format of the Lessons

Each lesson is made up of three major sections:

1. Objectives
2. Materials
3. Presentation

The Objectives give a brief summary of what the pupils are expected to accomplish during that lesson. Objectives are divided

into Asking, Saying or Answering, and Responding to. For example: Objective--Asking: What do you have? means that the children are to say the question, "What do you have?". The pupils are expected to actually use the item, not simply to hear or repeat it. In this case, the objective is the use and comprehension of the question. Similarly, another objective may read, Objective--Saying or Answering: I have a pencil. This, of course, means that the pupils are to produce the statement "I have a pencil." Or a combined objective might be used: Asking: What do you have?; Answering: I have a pencil. That is, the students would be expected to both ask and answer the question. "Responding to" refers to giving nonspoken or spoken responses to a command, instruction or question. An example could be, "Please sit down." The child's resultant behavior would indicate reception and/or comprehension of the utterance.

The Materials section of each lesson provides the pictures, toys, and other objects which are suggested by SWCEL to be used with the lesson. Specifically, the Materials section of the lessons lists the types of items needed and the number of those items required. Whenever possible, it is desirable to use toys and "real things" earlier in the program, and shift to pictures later in the year. The lesson plans are written this way also. Often such activities as eating certain foods and talking about them are suggested. Various toys are introduced to stimulate interest and conversations. Hand puppets carrying on dialogue are often incorporated into lesson activities. In nearly all cases, attempts are made to use materials with which the children are somewhat familiar. In general it is believed that familiar objects will be more likely to stimulate and interest the children.

The bulk of what happens during each lesson is found in the Presentation section. Activities in the Presentation have three content subdivisions: Review, Pronunciation, New Lesson Material. Regardless of the content, the procedure is organized into Activities and Steps, such as:

Presentation

First Activity

(Steps) 1.
2.
3.

Second Activity

(Steps) 1.
2.
3.
and so on.

In most of the lessons there are about eight activities, each with from one to ten steps. The Activities and Steps are directed toward the particular goals of the lesson. It is suggested that Activities and Steps be followed as suggested, in order to better insure expected outcomes.

Other Aspects of Content

The regular lessons in the OLP are augmented by two other types. One of these is the Criterion lessons which are review lessons taught approximately every seven or eight lessons. Generally, the Criterion lessons group together several kinds of question-and-answer objectives which were covered in several preceeding lessons. The general format of the Criterion lessons is like that of the regular lessons. Criterion lessons are used to give the teacher an indication of which children can and cannot perform according to the objectives of a given set of lessons.

In a like manner, the teacher may read the objectives of Criterion lessons and determine what types of utterances her class should have available for use.

SWCEL has also prepared six Content Tests for use after every twenty five lessons or so. These tests are given by the teacher to pupils at a time. Complete instructions are provided with each test, and the responses can be recorded on the test sheet by the teacher as she is administering the test. Each test is accompanied by a worksheet on which the teacher may record the names of the pupils and their scores. By checking the worksheet, the teacher can objectively determine which activities each pupil needs to review.

Culturally relevant material is built into OLP through a group of supplementary daily lessons that are based on authentic folktales or legends which are relevant to the Spanish speaking or Navajo child. The need for the Cultural Heritage Review Lessons (CHRL) grew out of the educational problem in the Southwest encountered by non-English speaking children when they entered Engligh speaking classrooms. The Cultural Heritage Review Lessons consist of several units, each with two parts designed to review a portion of the Oral Language Program. The first part of each unit contains review lessons that emphasize the syntax of the OLP, with special emphasis on the idiosyncratic problems which Navajo or Spanish speaking children face in language learning. For example, the Navajo units emphasize the basic sentence patterns that are especially difficult for children who speak Navajo. Each unit of the CHRL is generally taught for thirty minutes each day for a period of four days. The characters and events of the lessons come from the folktale on which the unit is

based. Visuals, designed by an ethnic artist, accompany each lesson. The second part of each unit uses the entire folktale on the fifth day as a listening exercise. Pupils listen to the story and view an accompanying filmstrip. The story is then discussed in English, using the language patterns and vocabulary which have been learned during the week.

Five Pre-lessons have also been prepared by SWCEL to be used with OLP. This set of brief daily activities is designed for children encountering school for the first time. The distinction between the Pre-lessons and the regular lessons is that children are not expected to produce or understand specific utterances. Rather the focus is upon other kinds of behavior such as imitating the teacher, and participating with or in front of the group. The rationale and instructions for the five Pre-lessons are found in Horner (1968).

Grouping and Pacing

Small group instruction is preferred over entire class instruction for two basic reasons. First, lessons presented to the class as a whole limit the number of times a child can offer responses. As a result, the number of times the teacher can strengthen and improve the child's performance is also limited. Secondly, in small group instruction, children not being taught at a given moment can benefit from watching and listening to the other group have its lesson. Children can take advantage of a lesson being taught more than once in a classroom, even though they are not actively engaged in each lesson. SWCEL suggests that group order be varied to take full advantage of this phenomenon--group A has its lesson first today, and tomorrow group B is first. In this way each group

can have the advantage of observing and hearing a lesson before it is taught.

The number of groups a teacher has and how many children per group depends upon the size of the class and the abilities of individual students. Nonetheless, SWCEL does not recommend having more than three groups in a class, each group with a maximum of ten students. Groups may be structured according to the children's skills either in a homogeneous or heterogenous manner. However, it is recommended that the groups be homogeneous if the range of proficiency in the class is wide. In such cases it will be easier to pace the children according to their needs, and those children who have progressed to a point in language development where the program is no longer beneficial can be easily removed from the OLP.

OLP is designed with a suggested pace of one lesson per day. However, the number of lessons taught in a given period of time depends upon: 1) "how well the children can sustain the length of time you devote to a lesson, and 2) how much of the lesson content the children are mastering." (Reeback, 1970a, p. 12.) It may therefore become necessary to slow the pace of OLP.

Teaching Techniques

Because the lessons offered by the OLP include explicit instructions on exactly what the teacher is to say and do, and what the children are to say and do, following the lesson plan is important. However, some degree of flexibility is afforded the teacher. For example, the teacher may substitute or add to the objects used: she may have the

children echo utterances more or fewer times than is specified; she may have the children perform an activity twice, or add an activity which makes use of the same language patterns as the lesson.

To aid teachers in presenting the OLP, the Teacher's Manual lists twenty teaching techniques, organized into five categories:

1. Shaping and Maintaining Correct Responses
2. Conventions
3. Modeling
4. Correcting Errors
5. Evoking Questions

During an actual lesson, the teacher would have the opportunity to use techniques from several different categories. The twenty techniques are discussed in detail in Reeback (1970a).

Shaping and Maintaining Correct Responses refers to getting a child to make a good utterance and to keep on making such utterances once he has started doing so. Five techniques are included in this category: (a) "Wait for long-latency responses"--that is, giving the child plenty of time to make his response; (b) "Prompt with partial utterances"--that is, instead of telling the child the whole utterance he is supposed to say, the teacher may prompt him with the first one or two words; (c) "Provide obvious consequences for all appropriate responses" (Reinforcement)--such as smiling, nodding the head, patting the child, praising him, giving him candy, and the like; (d) Reinforce immediately; (e) Reinforce the group--in other words, acknowledge group responses.

Conventions are the brief signals, usually gestures with the hands, that a teacher can use during a lesson to let the children know

what they are supposed to do next. There are five basic conventions: (a) listen, (b) come here, (c) whole class, repeat after me, (d) individual, repeat after me, and (e) "chain" dialogue. The suggested conventions are intended to enable the teacher to move directly into activities, rather than talking about them first.

Making an utterance which is to be echoed by the children is called modeling. Four techniques are included in the category of modeling. They are: (a) precede models with a conventional signal, (b) model loudly, clearly, and close to the children, (c) maintain consistency in pronunciation, and (d) separate model utterances accurately--that is, give utterances in the proper rhythm and melody.

Four techniques are suggested for correcting errors: (a) correct errors central to the lesson objective, (b) correct errors immediately, (c) reinforce the corrected response, not the error, and (d) re-evoke the corrected response.

The ability to ask questions in English is considered important. With this ability the child can make his wishes known and ask for information when he needs it. Furthermore, questions facilitate the understanding of English sentence structure in general. Two techniques are involved in evoking questions: (a) giving the cue, and (b) teaching the cue. For example, "Ask me" is a useful cue for a limited number of situation and question types. In some instances "ask" may need to be taught to the children to mean the same as "say."

Teacher Training

The OLP teaching training program is packaged and exportable. It is made up of two basic components. The first is a two week summer

institute. The second is a number of inservice meetings held during the school year. The objectives and related activities of the OLP teacher training program are described more fully in Reeback (1970b). The following is a brief description of some of the major activities of the training program.

During the two week session, various activities are conducted in an effort to acquaint teachers with the objectives of OLP. One such activity is that of microteaching, sessions during which the teachers actually practice OLP instruction. Opportunities are also provided for teachers to become familiar with the OLP teaching techniques, e.g., (Reinforcement, Conventions, Modeling, Correcting Errors, and Evoking Questions). Practice in the use of puppets and other realia is also included. During the training, teachers are also acquainted with the use of Criterion Lessons, Pre-lessons, and the Teacher's Manual. Skills in pronunciation and in making grouping decisions are also covered. In essence, the summer training institutes are designed to provide practical experience in OLP pedagogy. Inservice meetings during the school year help to raise teacher morale and present various other training components not presented during the summer.

Delivery System, Installation and Maintenance

Since 1967, OLP has gone through several developmental stages. What has evolved is a completely exportable, packaged program. All services necessary to deliver, install, and maintain the OLP program are available from SWCEL. These services include a teacher training program, a packaged

curriculum, inservice support, and all materials necessary for OLP record-keeping, evaluation, and the like. Information and other necessary services are available from SWCEL.

Evaluation

Numerous evaluations have been conducted to assess the effectiveness of the OLP. Research and evaluation is presently on-going. During the 1969-70 school year, the Oral Language Program was extensively field tested. The data from this testing were significant in the development of the present OLP structure. For this reason, these data are briefly discussed here.

The study was designed with three basic purposes in mind:

1. Identification of conditions in which the program is successful. Pre- and post-course performance of children who differed with respect to certain initial characteristics and with respect to curriculum exposure during the school year were compared.

2. Comparison of pupils receiving the Oral Language Program with pupils not receiving it. Pre- and post-course performances of a group receiving OLP were compared to pre- and post-school year performance of a group not receiving OLP. The two groups were matched as closely as possible in terms of entering characteristics.

3. Determination of necessary revisions in both the program and teaching strategies. Guidelines for refinements in components of the program, especially the assessment system and teacher training were sought. (Reeback and Osterreich, 1971, p. 67.)

Instrument

The instrument used to assess the OLP was the SWCEL Test of Oral English Production. The test covers the content of the OLP lessons. Its

intended use is as an achievement and diagnostic device. Primary emphasis is on the production of grammatically accurate, complete sentences, with some attention also given to pronunciation and vocabulary. Reeback and Osterreich (1971) explain the scoring and subtests of the instrument.

The total score is made up as follows:

Vocabulary		24
Pronunciation		31
Structure	a	171
	b	(114)
	c	(144)
	d	(57)
Total Possible		226

> For most of the vocabulary and pronunciation sections, toys are used rather than pictures to minimize confusing art work. Five pictures, used to elicit the sentences in the test, are included. In no case did these pictures confuse the children.
>
> The structure subscores reflect the emphasis on spontaneously produced complete sentences as follows:
>
> Structure a: Maximum spontaneous--Child scores three three points for spontaneously producing a grammatically accurate complete sentence.
>
> Structure b: Minimal prompted--Child scores two points for producing a grammatically accurate complete sentence after prompting.
>
> Structure c: Minimum spontaneous--Child scores two points for spontaneously producing an accurate short form answer.
>
> Structure d: Minimum prompted--Child scores one point for producing an accurate short form answer. (Reeback and Osterreich, 1971, p. 69.)

Procedure

The OLP was installed in approximately one hundred seventy classrooms. Most of the teachers had not used the Oral Language Program prior

to the 1969-70 school year. A ten percent random sample of the children in the one hundred seventy classrooms received the SWCEL Test at the beginning and end of the school year. Data were also collected on sex, grade, ethnic affiliation, percentage of non-Anglo children in the schools, and the number of lessons each child completed. Content tests were administered to the children at regular intervals. SWCEL Quality Assurance Specialists observed the teachers and filled out observation schedules, designed to indicate whether the teacher was using OLP techniques; whether she had employed Content Test results to prescribe review; and whether the teaching pace was within reasonable limits. In addition, teachers filled out an end-of-the-year questionnaire designed to elicit their attitudes about the program's effectiveness, along with some biographical information. These procedures were intended to evaluate the program's conditions of success.

In an effort to compare OLP pupils with non-OLP pupils, an additional thirty one classrooms were designated. Fourteen of these classrooms were used as controls. A twenty percent random sample of children in OLP and non-OLP classes took the SWCEL Test at the beginning and end of the year. Field consultants observed the teachers and filled out the end-of-the-year questionnaire.

Research on revisions of the OLP was conducted in five classrooms. The five teachers were in weekly contact with SWCEL, reporting their experiences in detail. Tapes of each Criterion Lesson were also sent to SWCEL, as were the Teacher Progress Reports. All children were given the Michel Test, a test similar in structure to the SWCEL, at the beginning and end of the year.

Findings

The following tables selected from Reeback and Osterreich (1971) illustrate the results of the study, (pp. 72-79).

PROGRESS REPORT

Table 1

SWCEL Test Scores, Mark I Total.

N	Pre Test $\bar{x}$	Pre Test S.D.	Post Test $\bar{x}$	Post Test S.D.	Gain $\bar{x}$
440	93.4	28.0	137.6	30.7	44.2

Table 2

SWCEL Test Scores by Sex, Mark I.

	N	Pre test $\bar{x}$	Pre test S.D.	Post Test $\bar{x}$	Post Test S.D.	Gain $\bar{x}$
Boys	236	91.5	29.0	135.3	31.4	43.8
Girls	204	95.7	26.6	140.2	30.0	44.5

Table 3

SWCEL Test Scores by Grade, Mark I.

Grade	N	Pre test $\bar{x}$	Pre test S.D.	Post test $\bar{x}$	Post test S.D.	Gain $\bar{x}$
Kindergarten	102	86.8	31.5	128.2	32.8	41.4
First Grade	338	95.4	26.6	140.4	29.5	45.0

PROGRESS REPORT

Table 4

SWCEL Test Scores by Ethnic Group, Mark I.

Ethnic Group	N	Pre test $\bar{x}$	Pre test S.D.	Post test $\bar{x}$	Post test S.D.	Gain $\bar{x}$
Anglo	37	111.9	16.0	146.2	26.8	34.3
Negro	19	108.9	15.7	160.8	20.0	51.9
Spanish	245	93.3	27.6	139.8	27.2	46.5
Indian	135	86.2	29.7	127.5	35.8	41.3
Other	4	102.0	22.1	148.0	19.0	46.0

Table 5

SWCEL Test Scores by Number of Lessons Completed, Mark I.

Lessons Completed	N	Pre test $\bar{x}$	Pre test S.D.	Post test $\bar{x}$	Post test S.D.	Gain $\bar{x}$
1-50	82	100.5	24.9	133.7	28.2	33.2
51-65	56	88.0	31.5	123.2	39.5	35.2
66-80	62	98.2	25.8	139.0	26.4	40.8
81-95	64	90.8	26.6	134.4	29.3	43.6
96-110	48	88.4	31.4	136.1	29.1	47.7
111-147	127	92.2	27.9	148.3	27.5	56.1

Table 6

SWCEL Test Scores by Percent of Non-Anglos in the School, Mark I.

Percent Non-Anglo	N	Pre test $\bar{x}$	Pre test S.D.	Post test $\bar{x}$	Post test S.D.	Gain $\bar{x}$
0-25	8	118.6	11.0	151.1	18.2	32.5
26-50	7	104.3	27.0	154.6	33.1	50.3
51-75	108	102.9	22.6	142.4	30.5	39.5
76-100	317	89.4	28.9	135.2	30.7	45.8

PROGRESS REPORT

It is apparent from these tables that the OLP may be a factor in the gains in language usage as measured by the SWCEL Test. Further support for this position is evidenced by the comparison of OLP and non-OLP children.

Table 7

SWCEL Test Scores for OLP and Non-OLP Children, Mark II

	N	Pre test $\bar{X}$	Pre test S.D.	Post test $\bar{X}$	Post test S.D.	Gain $\bar{X}$
OLP	46	108.6	16.7	150.8	18.3	42.2
Non-OLP	49	104.1	23.9	123.4	27.0	19.3

Table 8

SWCEL Test Scores for OLP and Non-OLP Children, Mark I

	N	Pre test $\bar{X}$	Pre test S.D.	Post test $\bar{X}$	Post test S.D.	Gain $\bar{X}$
OLP	440	93.4	28.0	137.6	30.7	44.2
Non-OLP	19	116.9	13.0	134.5	34.3	17.6

THE STRUCTURED CLASSROOM

Chapter 5

DARCEE/NPECE PRESCHOOL PROGRAM

Program Foundations and Descriptors

Background and History

The Demonstration and Research Center for Early Education/National Program on Early Childhood Education (DARCEE/NPECE) preschool program has evolved over the last 11 years. The original program, called the Early Training Project, was started in 1961 by Susan Gray and Rupert Klaus of George Peabody College for Teachers. It was designed to prevent the progressive educational retardation which is often characteristic of "disadvantaged" children. Research evidence indicates that such children enter the first grade slightly behind children of more advantaged backgrounds, and that by the end of elementary school the "disadvantaged" child has fallen two or three years behind (Gray, 1966). To offset this phenomenon, the primary concern of the Early Training Project was to plan and implement an intervention program for preschool "disadvantaged" children. The basic tenets of this plan have been standardized and are now being disseminated through the DARCEE/NPECE preschool program.

The overarching purpose of the program from its beginning days to the present has been to develop in children attitudes and aptitudes that facilitate their success in school learning processes. Among the attitudes seen as important are: motivation to achieve in school activities,

persistence to work hard over a period of time, and interest and enjoyment of learning situations. Gray and Klaus believed that the child's general attitudes toward school could be enhanced by the presence of successful persons after whom he could pattern himself. Research findings indicated that "disadvantaged" children do not adequately develop these attitudes and often have not been exposed to role models with whom they can identify.

Aptitude development concerns the fostering of those basic skills and knowledge which make academic progress possible. Aptitudes of primary concern include the ability to determine similarities and differences (perceptual development), the ability to order and make meaning out of the environment (concept development), and the use and development of language.

In essence, the project was designed to give attention to the development of the cognitive and affective structures of the child which were believed to be most conducive to school success. Reinforcement, defined as "the consequence, in terms of reward and punishment, for the behavior or response of individuals" (Gray, 1966) was used to foster appropriate behaviors. It was assumed that reinforcement would be critical in determining whether or not a particular act would be repeated. Positive reinforcement (reward) was assumed to be more effective than negative reinforcement (punishment), particularly in the learning of new behavioral responses. Thus, negative reinforcements were withheld for undesirable behaviors, and positive reinforcement for desired behaviors was stressed.

Sixty-one black children participated in the original Early Training Project. They lived in a highly stable city of about 25,000 in the upper South. Among all of the black children in the city in 1958, 61,

who came from the most deprived families, were selected. Selection was based on housing conditions, occupation and education of parents, and family income. The average yearly income of the families in the sample was approximately $1,500. The average educational level was about the eighth grade. Most of the mothers did domestic work, or worked in restaurants and beauty parlors. The fathers, where present, were generally employed in unskilled or semi-skilled labor. The average family had seven members. Approximately one-third of the homes had no father present. Housing conditions were generally considered to be extremely poor.

The children were randomly assigned to three groups, each made up of approximately 20 students. The first group (T_1) attended three ten-week sessions of instruction in basic perceptual, cognitive, and language skills over the three summers prior to their entry into first grade.[1] The sessions were carefully planned by teachers, using DARCEE sequencing principles. In addition, this group had three years of weekly meetings in their homes with a specially trained home visitor, during the months in which the preschool was not in session. The home visitor contact focused on providing continuity with the summer sessions by providing educational materials and generally reinforcing and supporting both the child and his parents in terms of the attitudinal and aptitudinal variables. In addition, the home visitor sought to make the mothers more aware of the possible opportunities for blacks and of realistic instrumental steps necessary to prepare a child to take advantage of these opportunities. A second group

[1]Currently, the DARCEE/NPECE program is not a summer program; rather it is carried out either from September through June or September through August.

(T_2) received treatment similar to T_1, but the treatment began a year later. As a result, the children attended two ten-week summer sessions and received two years of home visits. A third group (T_3) was the local control group, which received all tests but did not attend the summer sessions or receive the weekly home visits. An additional 27 children made up the distal control group (T_4), increasing the total sample from 61 to 88. The rationale for adding T_4 was to test the expected diffusion of the treatment effect in the small community. Selected results of the data analysis and the layout of the general research design are discussed at the end of this chapter.

Each experimental group of approximately 20 students (T_1 and T_2) had a black lead teacher, and during the first two summers there was a teaching assistant for every five children.[2] The lead teachers were experienced, certified, first grade teachers. The assistants were divided about equally as to race and sex. The high adult-child ratio increased the individualization of the learning process. A balance of the sexes among staff members allowed the men to serve as father-figures and achieving role models for the boys, many of whom were without fathers in the homes. It was also felt that an integrated staff was desirable with these children who had previously had little contact with whites.

Instructional System

The day-by-day activities of the DARCEE/NPECE program both now and during the Early Training Project have been selected by the teachers

[2]In the current DARCEE/NPECE program, teacher-pupil ratios are smaller with one lead teacher and one to two assistant teachers responsible for a class of 20 children.

and carried out in relation to the aforementioned attitude and aptitude goals. Emphasis is placed on activities presented in a developmental sequence. The child is thus introduced to techniques for processing information and for developing valuable motivational patterns. The objectives of the instructional system are to improve the child's inquiry skills and develop the learning process through the mastery of specific content materials. For example, activities are structured to move children from gross discriminations to fine discriminations; from large amounts of direction from the teacher to more independent learning; from simple tasks with one goal to more complex tasks involving a multiplicity of goals. Activities are also designed to move the child from active experiences involving the use of the entire body to quiet experiences, which children can engage in at their seats. Children progress from the use of concrete materials to abstract materials involving signs and/or symbols of things. Similarly, children begin with shorter activities (5-10 minutes) and progress to longer activities (up to 30 or more minutes) as the ability to persist develops. Development is emphasized by moving from nonverbal activities where the teacher does most of the talking to verbal activities where the teacher listens; from manipulating familiar materials to working with less familiar ones; from the illustration of concepts using many different objects to concept formation from only a few objects and examples. The materials and activities are therefore designed to develop the child's perceptual, conceptual, linguistic, and motor skills by providing opportunities to purposefully manipulate objects in the environment.

The DARCEE/NPECE program relies heavily on the initiative and

planning abilities of teachers. Teachers often prepare their own materials. They carefully structure the presentation of activities in order to get and retain the children's attention. They must plan the developmental sequences and behavioral objectives children should achieve.

For this reason, much of the training for the DARCEE/NPECE program centers around teaching techniques. The following suggestions are provided, which constitute "good" teaching in the DARCEE/NPECE program. The purposes of the program underlie these "tips."

1. Plan an activity for a specific purpose (to develop certain skills).
2. Organize the materials for the activity and have them ready in a box or bag.
3. Choose a good place in the room for the activity (table, floor, corner) and place your materials where you will need them.
4. Place the children so that they can all see you and you can reach each child.
5. Get the attention of all the children before beginning the activity.
6. Be enthusiastic about the activity (smile) and use a "game approach" to get the children excited or interested in what you are going to do together.
7. Set standards! Tell the children what you want them to do and how you want them to do it. Give very specific and clear directions.
8. Give each child his material for the activity (puzzle, crayons and paper, paste and paper, game board) or hold your material where all children can see it (flannel board, book, picture, object).
9. In an activity where each child has his own material, move around the group to give each child help or praise.
10. Sit on low chairs or stoop so that you can look at and talk directly to the children.

11. Always use the children's names--when asking questions, when giving directions, when talking about their work or belongings, when giving praise.

12. Keep the attention of the children by looking at them often, by touching them to praise them, by asking them questions they can answer, and by giving directions they can follow.

13. Praise the behavior you want to see--smile, touch child, use his name, tell him what he did right or well. Be positive!

14. Use a warm, pleasant manner with your children, but be very firm about what they are allowed to do. Give them limits!

15. Children have different abilities. Praise each child for what he can do and for his progress. Do not compare children.

16. Stop your activity while it is still fun for the children, so they will want to do it again another time.

17. You decide when the activity should end, and then collect the materials.

18. If the children have made something from paper during the activity, print their names on their work as each child watches you. If possible, hang the papers on the wall where the children can see them.

19. Prepare the children for the next activity.

20. Always have another activity (buffer) in mind in case the activity you have planned is not going well or does not take as much time as you had thought.

Classroom lessons in the DARCEE/NPECE program are incorporated into subject units. These units provide a general conceptual scheme for the introduction of activities. The lead teachers are responsible for selecting the topics of the units. Units are selected so that they will progressively expand children's knowledge and experiences of the world and will move them from simple to more complex tasks and concepts. In addition, the lead teachers are generally responsible for preparing the outlines

of the concepts to be developed, specific learnings anticipated, materials, and activities.

Daily program planning and evaluation sessions are held with the lead teacher and the teaching assistants at the close of the school day (usually from 1:00-2:30 p.m.). During these sessions, problems that presented themselves during the day are discussed. The day's activities are reviewed, the teacher and assistants estimate their effectiveness and the possibility of their future use. Detailed lesson plans are drawn up by the teaching assistants, in collaboration with the lead teacher, for the specific periods of the following day. Alternative plans are also provided, in the event that any planned activities prove to be ineffective. In most of the activities, efforts are made to use a variety of media and audio-visual aids.

After the completion of activities in the classroom the following day, the lead teacher-assistant teacher team evaluates the activities and the performance of individual children and records their observations on the lesson plans (see Appendix for sample of daily lesson plan). This serves two purposes: (1) it is an added stimulus for the teachers to improve and individualize their instruction, and (2) it furnishes the lead teacher with information on the progress of the children, making it possible for her to closely supervise their activities at all times.

The children report for the program at around 9:00 a.m., Monday through Friday (see Appendix for outline of a typical daily schedule). They usually meet first with the lead teacher in the large group. The children arrange themselves in a semi-circle according to their small groups. Each teaching assistant sits behind her group to give help where needed.

In these sessions, the lead teacher introduces and explains the chosen topic of emphasis for that day and presents the materials and activities. This first session is scheduled for approximately 15 minutes at the beginning of the year, but as the children gain in maturity and increase their attention spans, the periods are gradually extended, so that, by the end of the year, large group sessions last approximately 30 to 45 minutes.

Following the large group activities, the children meet in small groups of five or six under the direction of the teaching assistants. The assistants also monitor the juice break and the noon luncheon. The juice break and luncheon are utilized as periods for learning activities. Language development and concept formation are emphasized. An example is the teaching of number concepts--"How many cups do we need today? Why do we have twelve cookies if we have six children? Why did we have ten cookies yesterday?" Questions are also raised which lead to a number of interesting discussions. "What will happen if I plant the seeds in the apple?" These periods afford the opportunity for children to learn the names of different fruits and vegetables, and how they are categorized and classified. During such periods the lead teacher is free to supervise the teaching assistants and to work with individual children as the situation requires.

After the afternoon small group activities, the children meet once more in the large group. At that time, the lead teacher briefly reviews some of the day's experiences and distributes materials that the children take home to show to their parents.

As previously mentioned, the instructional methods of the DARCEE/NPECE project employ reinforcement theory. One of the major

problems was to decide what kind of positive reinforcement should be used. Because of certain observed patterns, which seemed to the researchers characteristic of lower class black homes in the sample (see Gray, 1966), strategies were devised which became basic to the approach of the program. In essence, the teachers and staff were considered to be the primary sources of reinforcement, because "deprived children . . . have received inadequate rewards from adults" (Gray, 1966, p. 9). Rewards from the teachers took the forms of nonverbal, physical reinforcement (smiles and/or hugs), verbal reinforcement (teacher may say, "I like the way you stacked the blocks, Johnny!"), and later more delayed rewards (gold stars, little trinkets).

The next step was to move children from these token and symbolic rewards to an internalization of their own reward systems and standards of excellence. Although it was not expected that the preschool children would be able to accomplish very much of this internalization, efforts were made to encourage children to set their own standards, evaluate their work, and take pride in their activities. Often the technique was a statement from the teacher such as "Aren't you proud that you painted such a good picture!"

As previously stated, the Early Training Project work with parents in the home was to provide continuity between the home and the preschool program. Emphasis was placed upon home activities, that would involve mothers in an active role in the fostering of relevant attitudes and aptitudes in their children. Very little primary concern was given to the amelioration of the home situation in relation to family structure and/or economic problems. Active contacts were maintained with the social welfare agencies of the town, however, and when it seemed appropriate, individuals were directed toward these services.

In the present DARCEE/NPECE program home visitor contacts are primarily education-oriented. The home visitor is often a former preschool teacher with training in sociology and social work. Several methods are used to realize the objectives of the home visits. The home visitor might spend a short period of time going through Ebony magazine each month, to point out articles and pictures about successful blacks, particularly those who were unrelated to entertainment and sports. Mothers are also encouraged to read to their children through role-play situations in which the home visitor plays the role of the parent and the parent plays the role of the child. Suggestions are given to parents as possible topics for parent-child discussions. It was discovered that often the mothers spent very little time with their children because of the exigencies of their daily lives. For this reason, many of the discussion topics are designed to be carried on during the preparation or the eating of meals. For example, the mother might say, "Tonight we're going to have Irish potatoes. Did you know there's another name for Irish potatoes? White potatoes." She might then ask the child to feel the potato. "What does it feel like? Is it hard or soft?" (For more complete explanations and suggestions for home activities see Gray, 1966 and Giesy, 1970.)

During the summer programs home visits were highly emphasized. Activities were suggested for the home, including dramatic activities, nature studies, searches for rhyming objects, and visits to such places as the post office, the library, and the supermarket talking about what is seen. A monthly newsletter was circulated, which encouraged parental participation with the children by emphasizing the following areas:

(1) announcements and information about the project; (2) suggestions relating to activities that parents could do with their children; and (3) something relevant and interesting to read to the child. (An example of a newsletter is found in the Appendix.)

Delivery System, Installation, and Maintenance

The Objectives of Program Installation

The intention of the DARCEE/NPECE curriculum approach is to increase the information processing ability of the children. The following aptitudinal objectives show the areas in which the DARCEE/NPECE program concentrates, (Brown et al., 1971, pp. 6-8).

I. Sensory Skills

Orienting and Attentional
- Visual
- Auditory
- Tactile-Kinesthetic
- Taste-Olfactory

Discriminatory
- Visual
- Auditory
- Tactile-Kinesthetic
- Taste-Olfactory

Relational
- Visual
- Auditory

Sequential
- Visual
- Auditory

II. Abstracting and Mediating Skills

Basic Concept Development

Color	Pitch	Speed
Shape	Length	Taste

Basic Concept Development (continued)

Size	Volume (aud.)	Flavor & Odors
Number	Texture	Time
Position	Weight	Age
Volume	Temperature	Affect
	Motion	

Association
- Objects with objects--functionally, spatially, temporally
- Labels with objects, sounds, actions, concepts
- Labels with labels

Classification
- Deductive classification
- Inductive classification

Sequencing
- Motor--sequencing of series of actions, directions, events
- Verbal--sequencing a series of concepts, events

Critical Thinking
- Drawing relationships
- Making inferences
- Making predictions
- Analyzing problem-situations
- Synthesizing ideas
- Hypothesizing
- Evaluating
- Drawing analogies
- Analyzing absurdities

III. Response Skills

Verbal
- Fluency
- Articulation
- Syntax
  - Single-word level--identification of objects, actions, sounds, concepts
  - Phrase level
  - Complete sentence level
    - Simple declaratives
    - Interrogatives
    - Negatives
    - "And" statements
    - "Or" statements
    - "If-then" statements
    - "I don't know" statements
    - Complex sentence--adverbial clauses

Motor

Small-Motor Coordination (eye-hand coordination)

Pasting	Cutting
Modeling	Lacing and Weaving
Painting	Tracing
Coloring	Solving mazes
Stringing	Following dots
Drawing	Printing

Orientation

- Left-to-right progression
- Top-to-bottom progression
- Front-to-back progression

Attitudinal development is considered to be as important as aptitudinal development. The assumption is that certain motivational factors are necessary for success in learning. The following outline (from Brown et al., 1971, pp. 9-10) sets forth the objectives for development of attitudes.

I. Personal Attitude Development

Self-Concept

- Realistic perception of self
- Realistic perception of self in relation to other adults and/or children
- Realistic perception of control over environment
- Ability to communicate desires to others

Self-Esteem

- Positive racial identity
- Feeling of worth (realistic)
- Internalized standards of excellence
- Willingness to engage in a challenging task
- Willingness to meet a novel situation
  - Materials
  - Environment
  - Strangers
- Willingness to do "hard" work
- Willingness to contribute in a group

Self-Control

- Realistic appraisal of own behavior
- Inner-directed, intrinsically motivated control
- Reasonable reaction to frustration
- Willingness to be a redirected or to redirect self

Ability to recognize and deal with in a constructive way:
- Anger
- Fear
- Disappointment
- Pride
- Excitement

Ability to make constructive use of time when task is completed
Ability to make decisions
Willingness to accept consequence of own behavior
Willingness to assume responsibility for own behavior

Independence
- Willingness to assume responsibility for personal care
- Willingness to assume responsibility for care of personal belongings
- Willingness to assume responsibility for own physical needs (e.g., tie shoes, wipe nose, button sweater)

II. Social Attitude Development

Trust in others
Awareness and respect for needs of others
- Sharing
- Waiting turns

Interest in interacting with others (peers)
Interest in interacting with adults
Ability to initiate interaction
Ability to tolerate conflicting interest
Ability to give assistance
Ability to request assistance
Ability to function as member of team or group

III. School Attitude Development

Curiosity
Persistence
Delay of gratification
Interest in school type activities
Achievement motivation
Ability to sustain interest in activity with a delayed conclusion
Internalization of "work first/play later" principle
Task-oriented vs. random behavior
Internalized standard of excellence of performance
Need for regular attendance

How are the objectives assessed? NPECE and DARCEE have developed a simple record-keeping system for teachers to assess the children's progress on a daily basis. The teacher places a diagonal line in the box opposite the names of the children to whom she has attempted to teach a certain objective. After teaching the objective a second time, she makes another diagonal line to form an "X." When a child has accomplished the objective, the teacher darkens the box with a colored pencil. Such a system serves as a checklist for student progress and enables the teacher to improve planning and evaluation. It also serves as an effective tool for project trainers to evaluate and assist teachers. The cognitive objectives of the DARCEE/NPECE Program are also assessed through the NPECE Test for the Assessment of Basic Skills (TABS). This test employs a variety of response methodologies to measure whether children in DARCEE classrooms are attaining the cognitive goals of the program.

Attitude measures are also being developed. These instruments are designed to measure whether children are achieving the affective goals of the DARCEE program. A recording form to be used four times a year by teachers to assess and suggest strategies for improving individual children's attitude objectives has been prepared. A test of attitude development will be designed during the coming year.

In addition, to its assessments of the children, NPECE and DARCEE have developed an observational rating form to assess classroom instruction. This form can determine the extent to which a classroom resembles the DARCEE program.

Delivery

Brown, Dokecki, O'Connor, & Stinson (1971, pp 10-14) have defined Ten Essentials necessary to the replication of the DARCEE/NPECE program. The essentials are the basis of DARCEE/NPECE training and evaluation.

1. Physical Setting--The classroom is highly organized in terms of its spatial and temporal aspects. The year begins with classroom devoid of stimuli which might distract the child's attention from the teacher. Physical additions are made gradually as they become meaningful to the children. Maximum use is made of wall space, floor plan, materials, in fact, every part of the physical environment, to facilitate attainment of program objectives.

2. Grouping--Children work in large and small groups. Large group is comprised of all the children in the class. The size of the small group is determined by the number of adults in the classroom, one adult being assigned to each group. The reduced number of children per teacher in small group allows for a more individualized program. Children are grouped and regrouped homogeneously on the basis of specific attitude and aptitude criteria.

3. Planning-Implementation-Evaluation: The Role of the Teacher--The teaching process includes planning, activity implementation, and evaluation. Sufficient time is provided each day for the planning of new activities and the evaluation of activities just completed. The cycle is continuous in that one day's evaluation leads directly into plans for the next day's activities. Planned structured activities for the attitude and aptitude development of an individual child, and the groups, are specific and appropriate to the children's developmental levels. The teacher first selects a goal or objective which matches or meets the needs of each child and yet is consistent with the level of the large and small groups; then she plans an activity using selected materials, procedures, and techniques. It is in this sense that the program can be viewed as utilizing an "open framework," to borrow Weikart's (1971) phrase, in that the carefully planned and structured activity framework is open to, rather requires, change based on the needs and performances of the individual children. In addition to day-to-day implementation, the teachers use the evaluations to formulate long range plans--thus facilitating curricular development. Every adult (teacher, assistant teacher, volunteer, or parent) in the DARCEE classroom functions in a "teaching role." This is made possible by a "team teaching" approach which is fundamental to the DARCEE approach. The lead teacher, usually a certified teacher, accepts the overall

responsibility for the classroom curriculum and serves as team leader. Both lead teacher and small group teachers function as planners, implementers, and evaluators.

4. Organization and Utilization of Time--The day is carefully organized into a well-planned, consistently followed schedule--meals, snacks, toileting, outdoor play, small group and large group activities--which allows for the socio-psychomotor needs of young children and insures optimum use of the time for implementation of the open framework program.

5. The Attitude Development Program--Modeling, scheduling, and reinforcement principles are utilized to reach the objectives of the attitude development program. Features of behavior such as achievement motivation, delay of gratification, persistence, independence, positive self-concept, interest in school-type activities, curiosity, and eagerness to learn are encouraged and reinforced through a general teaching style and as an integral part of the curriculum rather than in isolated and specific attitude-related activities. The overall curriculum "medium" is the attitude "message."

6. The Aptitude Development Program--The curriculum provides for the development of basic sensory, perceptual, conceptual, and language skills that are important to "learning to learn." The instructional program is based on the development of those skills necessary to perceive and discriminate environmental stimuli (Sensory Skills), order this information in a perceptual and conceptual framework (Abstracting Skills), and to express the results of the perception and mediation processes (Response Skills), following an information processing model. A detailed set of instructional objectives is used by the teachers to relate this theoretical framework to day-to-day program implementation.

7. The Unit Approach--The basic skill and attitude development program is implemented through the open framework approach and often through the use of instructional units. An instructional unit is a detailed outline of concepts and understandings organized around a central theme. It serves to integrate and order learning skills, attitudes, and curriculum content. The skill and attitude objectives within the instructional activities of a given unit are sequenced in order to present learning situations of increasing complexity and abstraction. This intraunit sequencing is paralleled by the interunit sequencing from unit to unit. The content of these units is not the primary focus but rather the major emphasis is on the specific aptitides and attitudes which are developed.

Thus, the role of the unit is to serve as a vehicle for presentation of the curriculum, another "medium is the message" feature of the program. (It should be noted that many program activities are not unit related. These are generally included to achieve certain objectives not naturally dealt with in a given unit; however, the overriding principle of sequencing is never lost sight of in these extraunit activities.)

8. Materials Development--The teachers choose or create materials as needed in order to facilitate attainment of specific objectives. Part of the daily planning session is spent in carefully choosing and/or preparing materials for the activity implementation and determining their most effective mode of use. This enhances the teachers' view of themselves as personally important in the implementation of the DARCEE general approach.

9. Reinforcement and Behavior Management--Teachers verbally and physically (smiles, pats, hugs, etc.) reinforce children for desired behavior and withhold reinforcement for undesired behavior. Reinforcement procedures are used to help children successfully approximate basic skill, attitude, and other behavioral goals.

10. Parent Involvement--Parents are meaningfully included in the effort to enhance the educability of their child. Parents are encouraged to see themselves as effective change agents in their homes and communities. Methods which have been used include home visitation by trained personnel, guided observations in the classroom, and actual classroom participation.

Installation

Since each adult in a DARCEE/NPECE classroom is expected to function in a teaching role, systematic training of all staff members is essential. Preservice training, like the program itself, has evolved over the past 11 years. Lead teachers and teaching assistants attend a two-week session prior to the opening of the program. One of the main objectives of the training session is to give the teachers a clear understanding of the ten DARCEE essentials. This is done by giving teachers an opportunity to observe DARCEE/NPECE classrooms, listening to lectures, participating in

role play, and actually teaching small groups. Suggestions for materials and activities are given during the sessions and are carefully explained in terms of the program essentials. Thus, the teacher learns to plan, implement, and evaluate her activities with the children. A detailed package of teacher readings and trainer lesson plans is now in the process of being completed.

Replications of the DARCEE/NPECE Approach

Four sites have installed and implemented the DARCEE/NPECE approach. The four sites are: the Mille Lacs Reservation in Onemia, Minnesota; Reading, Pennsylvania; Louisville, Kentucky; and Macon, Georgia. All the programs started DARCEE/NPECE in the fall of 1971.

The site at Mille Lacs, a Chippewa Indian Reservation in Central Minnesota had operated for several years as a Head Start demonstration center for indial children. Three classrooms of about 15 children each, assigned by age, were put into operation under the DARCEE/NPECE approach. Each of the three classrooms has a certified lead teacher and two assistants. One home visitor serves the three classrooms. The school day begins at 10:00 a.m. with breakfast, and ends at 1:00 p.m. after lunch.

In Reading, Pennsylvania one classroom used the DARCEE/NPECE approach. That classroom was selected out of the 11 preschools in the Berks County Intermediate Unit. The classroom is located in a Methodist church with one lead teacher and two assistants. A home visitor conducts the parent contact program. The 15 children, ranging in age from three to five, are predominately black and Puerto Rican. The school day is from 8:30 a.m. until 3:00 p.m. and includes the serving of breakfast and lunch. Most of the afternoon is reserved for the children's naps.

Four kindergarten classrooms in three schools employ the DARCEE/NPECE approach in Louisville, Kentucky. Two of the classrooms are located in neighboring elementary schools within a low income, predominately black housing project. The other two classrooms are in a predominately white, elementary school in a highly mobile neighborhood. Each classroom of about 20 students is staffed by a lead teacher and one assistant. Two home visitors work with the four classrooms. The school day begins at 8:30 a.m. and ends at 1:30 p.m. Children are served breakfast and lunch.

In Macon, Georgia four kindergarten classes in two elementary schools are in operation. Each room has a lead teacher, an associate teacher, and an assistant. Two of the classes are black, and the other two are racially mixed. Class sizes range from 15 to 21 students. Morning and afternoon sessions are in operation (8:30 a.m. to 11:30 a.m. and 12:00 noon to 3:00 p.m.). Children are served lunch. There is no home visitation program.

Teachers and staff at each site were trained on the campus of George Peabody College in Nashville, Tennessee. On-the-site assistance was also provided in setting up classrooms, and in the first day's operation. Varying amounts of on-the-site training, depending upon the needs of the individual teachers, were also conducted. This assistance included training staff, observation of whether the classrooms met the DARCEE/NPECE essentials, and feedback sessions, during which the trainer observed the classrooms and joined in the planning, implementation, and evaluation process with the teacher and her assistants. Visits were also carried out by the training staff every month or every other month to maintain the projects. Such visits began when the classsoom met DARCEE/NPECE specifications.

Evaluative data at the four sites are not yet complete. However, in light of the DARCEE/NPECE essentials, the projects seem to be accomplishing varying degrees of success (see A Preliminary Report on the Installation of the DARCEE Preschool Model, January 1972), but the most common weakness is the lack of parent involvement.

DARCEE/NPECE Evaluation

Evaluation of the Early Training Project

Because of the complex theoretical constructs it attempted to teach, the Early Training Project found accurate and objective assessment of its results extremely difficult. Many of the attitudinal and aptitudinal objectives of the program did not lend themselves to measurement. Gray (1971) points out, "As difficult as it is to assess intelligence, it is far more difficult to assess, except indirectly, one's feelings of self-esteem, and one's desire to achieve or to approach a standard of excellence" (p. 6). The results of this problem forced the researchers of the Early Training Project to assume that in most cases the attitudes which the program sought to develop were a necessary condition for school achievement, and that without them children would not do well in school. Because of the paucity of attitudinal measures appropriate for preschool children, most of the data they used were related to tests of intellect and school achievement. The particular measures chosen for evaluative purposes of the original 1961 sample were the Stanford-Binet intelligence test, the Peabody Picture Vocabulary Test, and the Illinois Test of the Psycholinguistic Abilities. The major concern of the program, however, was related to

the children's success in school, as defined by their performance on achievement tests and other available data on general classroom performance. The Metropolitan Achievement Tests, and at one time the Stanford Achievement Tests were used for this purpose. Although these tests were considered to be useful indices of performance, their direct applicability to the program was limited. Gray (1971) states, "They do not assess many things which we had attempted to teach; they do assess a number that we do not attempt to teach" (pp. 5-6). These problems inhibit the interpretation of the data analysis (Klaus & Gray, 1968).

Testing programs and data collections were conducted from 1961 through 1968, the end of the second grade for the children. Detailed results of the testing are given in Klaus & Gray (1968) and Gray & Klaus (1970). In brief, the children were tested before and after the summer experience on the Binet, on the Peabody Picture Vocabulary Test (PPVT), and on a few tests designed by the project research team to assess the attitudes with which the project was concerned.

At the end of the summer experience, the experimental groups showed a mean gain of eight points on the Binet IQ, and the control groups a gain of three points ($p. < .05$). Similar differences were found on the PPVT. Possibly because of the low reliability of the instruments, the attitudinal measures failed to discriminate between pre- and post-scores of experimentals and controls.

Children were also tested on the Metropolitan Achievement Test at the end of the first grade. No significant differences were found between the groups. Klaus & Gray (1968) explain these phenomena.

> In attempting to analyze possible reasons for our failure to demonstrate a lasting gain, the most probable one seemed to be that of too little too late: the intervention program was too short, too late for maximum effect, and not as precisely related to the variables we attempted to manipulate as would be possible with more intensive planning. (p. 2.)

The study was continued over the next five years. A layout of the general research design is found in the Appendix. The following table shows that the four groups were not strictly comparable at the time of the pretest. T2 had the advantage on performance measures. Data gathered on the home situations indicated that in T1 there were twice as many father-absent homes as there were in T2. The mean income of T1 homes was little more than half that of T2 homes. As a result it is difficult to make meaningful comparisons.

Table 1

STATUS IN MAY 1962 OF FOUR GROUPS USED IN ANALYSIS IN 1966

Tests	T1 (Exper.) ($N = 19$)	T2 (Exper.) ($N = 19$)	T3 (Local Control) ($N = 18$)	T4 (Distal Control) ($N = 24$)
CA (mo.)	45.0	46.0	47.0	45.0
Binet MA (mo.) ...	40.7	43.5	40.3	40.1
Binet IQ	87.6	92.5	85.4	86.9
PPVT MA (mo.) ..	30.0	30.6	29.4	32.0

Reprinted from Klaus & Gray, 1968, p. 6

Table 1 and Figure 1 from Gray & Klaus (1970, pp. 6-7) show the patterns of performance on the Binet IQ at each testing. It seems that the intervention caused an initial rise in aptitudes, leveled off, and then began a decline once the intervention ceased. The control groups tended to show an increase at the time of entrance into school, then a slight but consistent decline. Differences between experimentals and controls on the Binet were significant at the end of the third year after intervention ceased.

TABLE 2

MEAN STANFORD-BINET MA AND IQ SCORES FOR THE FOUR TREATMENT GROUPS AT EACH ADMINISTRATION

Date of Administration	T1(N=19) MA (mo.)	T1(N=19) IQ	T2(N=19) MA (mo.)	T2(N=19) IQ	T3(N=18) MA (mo.)	T3(N=18) IQ	T4(N=23) MA (mo.)	T4(N=23) IQ
May 1962	40.7	87.6	43.8	92.5	40.3	85.4	40.3	86.7
Aug. 1962	50.7	102.0	46.9	92.3	44.3	88.2	43.4	87.4
May 1963	55.6	96.4	56.0	94.8	53.2	89.6	50.4	86.7
Aug. 1963	59.3	97.1	60.6	97.5	55.0	87.6	52.3	84.7
Aug. 1964	68.0	95.8	71.6	96.6	62.3	82.9	59.4	80.2
Aug. 1965	83.8	98.1	86.3	99.7	79.4	91.4	77.0	89.0
June 1966	88.7	91.2	93.4	96.0	86.8	87.9	82.9	84.6
July 1968	106.0	86.7	111.4	90.2	104.7	84.9	96.2	77.7

Reprinted from Gray & Klaus, 1970, p. 6

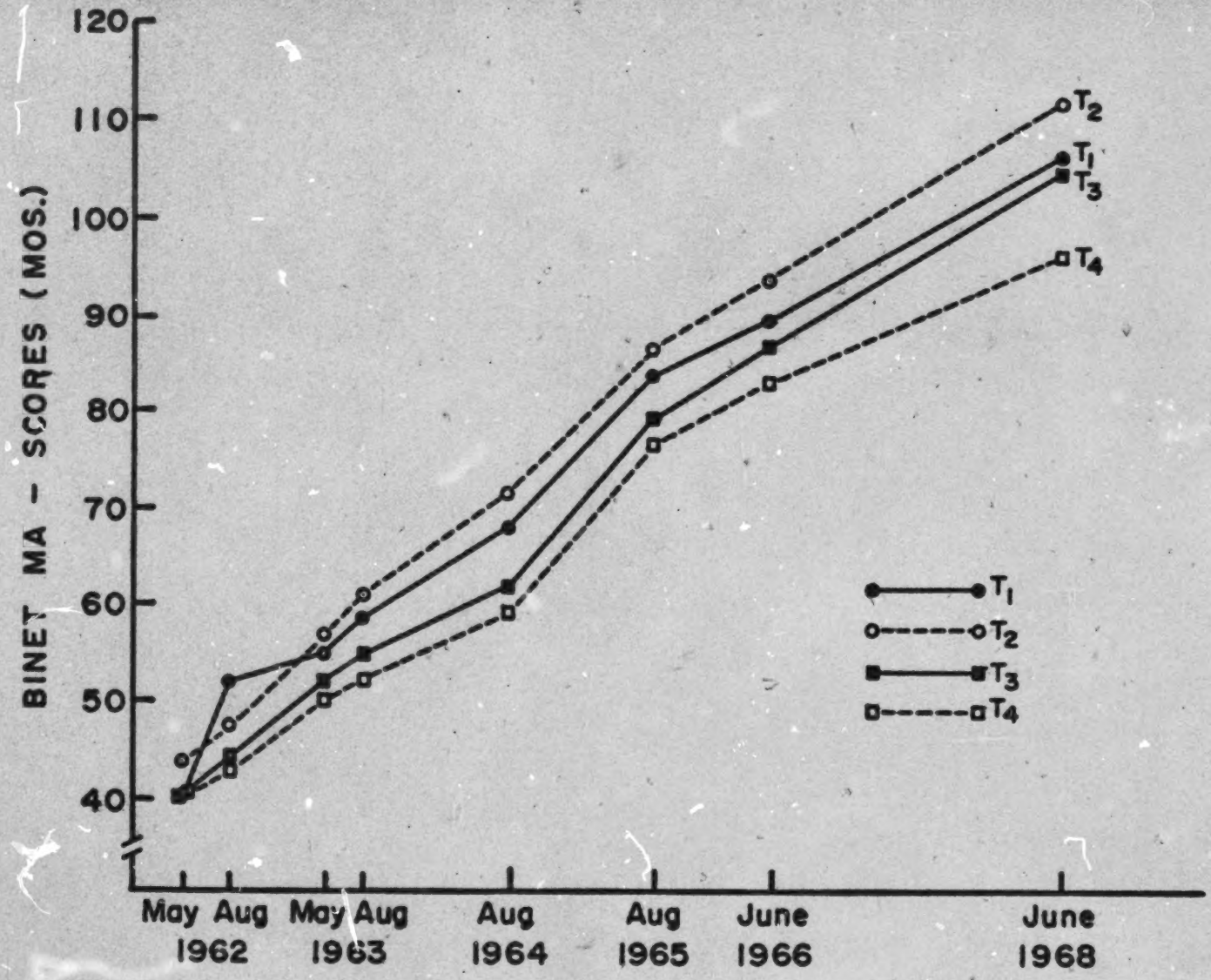


Figure 1: Mental ages for experimental and control groups on the Stanford-Binet.

Reprinted from Gray & Klaus, 1970, p. 7

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The data on the Metropolitan Achievement Test did not yield significant differences on any of the subtests in 1968 with the exception of the reading score, in which T3 scored higher than T4. In 1965 the experimentals had been superior to the controls on three tests and on two tests in 1966. These data were interpreted as showing that "the intervention program did have measurable effects upon test performance at the end of first grade, but that by the end of fourth grade, the school program had failed to sustain at any substantial level the initial superiority" (Gray & Klaus, 1968, p. 15).

Evaluation of the DARCEE/NPECE Approach

During the 1971-72 school year, the DARCEE program was evaluated at a total of 15 different classrooms with 156 children. The DARCEE program at four sites (11 classes and 115 children) was compared to one control site that had four classrooms and 41 children. The evaluation was based on a pretest and posttest design using the Boehm Test of Basic Concepts and the NPECE Test of Basic Skills. The Boehm test is a 50 item, group administered, standardized test of cognitive ability in basic concepts; Form A was used at pre and posttest periods. The NPECE test is a 161 item, individually administered instrument that was developed by the NPECE staff. It is a domain-referenced instrument with two equivalent forms; Form A was used at pretest and Form B was used at posttest. The content surveyed within the NPECE test covered a wide range of preschool skills, but primary emphasis was placed upon selected skills from objectives relevant to the DARCEE preschool curriculum.

The pre and posttest status of each of the five sites is shown in Tables 3 and 4 with respect to the Boehm and NPECE tests respectively. The percentage gain scores reported are percent gain with respect to total possible gain. For example, a child who obtains a pretest score of 27 on the Boehm test has a maximum gain potential of 23 points (50-27) whereas a child who scores 41 on the pretest has a gain potential of only 9 points. If each of these children gained 3 points, the simple percent gain for the first child would be PG= (3/50)(100) = 6.00 and the second child would have a simple percent gain, PG= (3/50)(100) = 6.00. However, the first child gained 3 points out of a potential of 23 and the second gained 3 points out of a potential of 9. Using the potential gain as a percentage base shows that, in this example, the first child obtained PG= (3/23)(100) = 13.04 while the second child obtained PG= (3/9)(100) = 33.33, the latter percentages are the ones reported in Tables 3 and 4.

Although the data for all sites are shown in the following tables, the most accurate evaluation can be obtained by comparing sites T3 and T4. The reason is that the classes in both sites were matched with respect to size, racial composition, family income, sex composition, mobility, etc. Site T4, the Non-DARCEE control group, serves as the basic yardstick against which the four (DARCEE) groups can be partially assessed, but sites T1, T2, and T5 were not strictly comparable with site T4 at pretest. Consequently, those comparisons should be made with considerable caution.

Table 3 shows that the percentage gain on the Boehm test for the four DARCEE sites ranged from a low of 19.62 to a high of 35.20 as compared to 24.02 for the non-DARCEE control site. The most accurate comparison,

however, is to be obtained by contrasting the T3 DARCEE site which gained 35.20 percent with the T4 control site which gained 24.02 percent; a difference of 11.18 percentage points in favor of the DARCEE group. The mean raw score gains were 8.82 and 6.00 points for the T3 and T4 sites, respectively; a 2.82 point gain in favor of the DARCEE site. Table 3 also reports pre and posttest status and percentage gains for groups within each site. The better control group showed a 34.06 percent gain on the Boehm test; five of the nine DARCEE groups showed higher gains ranging from 34.47 to 44.68 percent. The lower control group showed a gain of 15.99 percent, but none of the DARCEE groups had gains that low; the four DARCEE groups that failed to gain more than the better control group showed gains ranging from 16.28 to 30.37 percent.

Data from the NPECE test show considerably smaller percentage gains (Table 4) than for the Boehm test; the NPECE test was apparently more difficult. The percentage gains on the NPECE test for the four DARCEE sites ranged from a low of 12.00 to a high of 18.06 as compared to 14.60 for the non-DARCEE control site. Again, the most important comparison is the 18.06 percent gain achieved by site T3 versus a 14.60 percent gain by site T4; a difference of 3.46 percent in favor of the DARCEE site. The better control group achieved a gain of 15.15 percentage points while five of the nine DARCEE groups achieved higher gains ranging from 18.38 to 22.82 percentage points. The lower control group achieved a gain of 14.80 percentage points, and four of the DARCEE groups fell below that mark with gains ranging from 7.69 to 13.25 percentage points.

Analysis of the DARCEE/NPECE data is continuing, and further results can be obtained from the National Program on Early Childhood Education's office in St. Louis.

TABLE 3

PRE AND POSTTEST STATUS WITH PERCENT GAIN
FOR FIVE STUDY GROUPS ON THE BOEHM
TEST OF BASIC CONCEPTS

STUDY GROUP	N	RAW SCORE MEANS PRETEST	RAW SCORE MEANS POSTTEST	PERCENT* GAIN
T1 (DARCEE)	10	17.80	28.90	34.47
T2 (DARCEE)	22	27.32	31.77	19.62
GROUP 1	13	31.00	35.38	23.05
GROUP 2	9	22.00	26.56	16.28
T3 (DARCEE)	51	24.94	33.76	35.20
GROUP 1	22	27.41	34.27	30.37
GROUP 2	29	23.07	33.38	38.28
T4 (NON-DARCEE)	41	25.02	31.02	24.02
GROUP 1	21	28.33	35.71	34.06
GROUP 2	20	21.55	26.10	15.99
T5 (DARCEE)	31	28.13	35.29	32.74
GROUP 1	8	30.50	37.75	37.18
GROUP 2	6	26.50	37.00	44.68
GROUP 3	9	26.78	31.22	19.12
GROUP 4	8	28.50	36.12	35.44

*PERCENT GAIN = [(POSTTEST-PRETEST)/(50-PRETEST)](100)

TABLE 4

PRE AND POSTTEST STATUS WITH PERCENT GAIN
FOR FIVE STUDY GROUPS ON THE NPECE
TEST OF BASIC SKILLS

STUDY GROUP	N	RAW SCORE MEANS PRETEST	RAW SCORE MEANS POSTTEST	PERCENT* GAIN
T1 (DARCEE)	10	45.60	70.00	19.61
T2 (DARCEE)	22	78.36	89.36	12.00
GROUP 1	13	90.46	101.00	13.25
GROUP 2	9	60.88	72.56	10.70
T3 (DARCEE)	51	77.18	93.94	18.06
GROUP 1	22	80.23	96.00	17.57
GROUP 2	29	74.86	92.38	18.41
T4 (NON-DARCEE)	41	73.07	87.22	14.60
GROUP 1	21	78.52	92.38	15.15
GROUP 2	20	67.35	81.80	14.08
T5 (DARCEE)	31	74.06	88.22	14.76
GROUP 1	8	74.38	95.25	22.82
GROUP 2	6	69.33	87.83	18.38
GROUP 3	9	75.44	86.89	12.11
GROUP 4	8	75.75	83.00	7.69

*PERCENT GAIN = [(POSTTEST-PRETEST)/(50-PRETEST)](100)

Chapter 6

THE BEHAVIOR ANALYSIS PLAN

Program Foundations and Descriptors

The Behavior Analysis Plan, developed at the University of Kansas, is an educational program designed to improve children's learning experiences. It is a federal Follow Through model. The Behavior Analysis approach emphasizes the use of positive reinforcement, and it makes the learner responsible for the consequences of his own actions in the classroom (Bushell, n.d.). The program includes aspects of team teaching, non-graded classrooms, programmed instruction, individualized teaching, and the use of a token exchange system within a fairly structured curriculum.

The program is based on the assumption that if the classroom learning situation gives immediate praise and reinforcement to appropriate behaviors, the learning and achievement of the children will be accelerated. Consequently, a major objective of the program is to use many things in the classroom as reinforcers. For example, the child who successfully writes a complete sentence may be rewarded (reinforced) by attention and praise from his teacher, or by the opportunity to play with a toy, read a favorite book, or engage in free play.

Such incentives are believed to be effective only if they are presented immediately after the desired behavior occurs. This presents a problem in classroom management. It would be a near impossibility to

maintain operations if a child were permitted to go out and play immediately after he had given a correct response to a question. Behavior Analysis uses a token system to solve this problem. Some type of token can be given to a child immediately after a good behavior without interrupting what the child is doing, and it can be exchanged later for the privilege of enjoying activities such as those mentioned above.

A token can be any object, usually one that small children can hold or put in a pocket. It might be a marble, a poker chip, a match stick, or a cardboard disc. Regardless of what it is, because of its exchange value, it serves as an immediate reinforcer of the desired behaviors. The result is an increase in the child's motivation to learn.

The Behavior Analysis approach also attempts to unite professional educators, paraprofessionals, and parents in the teaching process. Involving parents in the actual instructional process is seen as having a number of advantages. It enables the parents to fully understand what takes place in the school, and it provides some carry-over into the home. In a very practical way, the use of parents in the classroom enables teachers and their aides to engage in small group instruction while the parents provide individual tutoring and lessons in handwriting and spelling.

A training program for parents is an integral part of the Behavior Analysis approach. Parents are trained in the classroom for six to eight weeks. This relatively short training period enables more parents to have direct contact with the program. The following school year some of the parents who were trained are employed as aides for a semester. The

next year, some of those who were semester aides are employed to fill full-time positions as teacher aides. The result is the involvement of parents at various levels on the instructional team. Each classroom is staffed by four adults, the lead teacher, the full-time aide, and two parent aides. The four-adult team provides each child with the personal attention and reinforcement needed for him to learn at his maximum rate.

Instructional System

The instructional system of the Behavior Analysis classroom follows a standard but flexible pattern. It is standard in the materials used, and the three content areas which are taught: reading, mathematics, and language arts. Table 1 lists the materials which make up the curriculum of the Behavior Analysis for Follow Through.

These curriculum materials have been chosen because they meet five criteria outlined by Bushell (1970, p. 9), as follows:

1. they describe the behavior the child will be capable of at the end of the sequence,
2. they require frequent responding by the child,
3. they contain clear criteria for a "correct" response,
4. they allow for individual rates of progress, and
5. they provide for periodic testing of achievement gains.

On the other hand, the instructional program is flexible enough to provide for individualized instruction. A major step in the instructional process is to determine how much the child already knows about what is being taught. To help the teacher decide where each individual child needs to begin working in a learning sequence, an Entry Behavior Inventory and

Table 1

Behavior Analysis Curriculum for Follow Through

READING:

Behavior Analysis Phonics Primer, *Behavior Analysis Sponsor University of Kansas*

then

Programmed Reading, *Buchanan and Sullivan Associates Webster Division, McGraw-Hill Book Company*

then

Reading Laboratory Series, *Science Research Associates, Inc.*

MATHEMATICS:

Sets and Numbers, *Suppes and others, Random House/Singer.*

LANGUAGE ARTS:

Behavior Analysis Handwriting Primer, *Behavior Analysis Sponsor, University of Kansas*

then

Handwriting with Write and See, *Skinner and Krakower, Lyons and Carnahan*

then

Basic Goals in Spelling, *Kottmeyer and Claus, Webster Division, McGraw-Hill Book Company*

or

Words and Patterns, *Day and Lightbody, Science Research Associates, Inc.*

or

Spelling and Writing Patterns, *Botel and others, Follett Educational Corporation.*

Source: The Behavior Analysis Plan for Follow Through, p. 5.

several diagnostic tests are used. The individual assessment procedures coupled with the team of four adults in the classroom add flexibility and allow for ample individualization.

The daily schedule of the Behavior Analysis classroom consists of three parts: planning, formal instruction, and special activities (or back-ups). Each day, a period is set aside for planning. The planning period is directed by the lead teacher, and it allows the classroom team to devise strategies that will best meet the changing needs of the children. During the planning sessions, attention is also given to new or difficult sections of the curriculum, possible revisions in the classroom routine, and/or back-up activities.

Formal instruction involves integration of the three core subjects. Reading, mathematics, and language arts are taught to small groups during each instructional period. Thus, by providing at least three instructional periods during the day, each child receives instruction in every subject. Every instructional period is planned in conjunction with special or back-up activities. At the beginning of the year a ten to fifteen minute instructional period would be followed by a special activity of the same length; then another fifteen minutes of instruction, followed by fifteen minutes of another special activity, and so on. It is during the instructional period that the children can earn tokens. During the special activities they may exchange the tokens for various incentive activities. However, as the skills of the children increase, so does the duration of the instructional period. By the end of the year, instructional periods might be forty-five minutes long followed by ten minutes of special

activities. In the third grade it is not uncommon to find twenty minutes of back-up activity supporting an entire morning's work.

During instructional periods, children are given tokens according to their individual improvements, they do not compete against each other for them. The system should work so that each child has enough tokens to exchange for some activity during every spending period, and that the same child does not always have to buy the lowest priced items. If a child does not want to spend he is allowed not to. Each spending period should offer a number of activities at different costs, the prices determined by how important the activity is to the children. Teachers are warned not to keep a consistent schedule of activities and prices, because, if children know what is coming, they will work only until they have enough tokens to buy the activity they want.

The concept of positive reinforcement is also employed as a technique for classroom discipline. Verbal or physical reprimand or threats are not used. Instead of scolding, nagging, or physically punishing an obstinate child, the Behavior Analysis teacher gives a great amount of reinforcement to another child who is demonstrating the expected behaviors. The child with the inappropriate behavior is ignored. When he does perform in the desired manner he is heavily reinforced. Some behaviors cannot be ignored. In such cases the child is told what rule he has broken and is seated in a chair away from the other children for three minutes. When the three minutes have elapsed, the child returns to the group where he is rewarded for his appropriate behaviors.

Delivery, Installation, and Maintenance

Implementation of the Behavior Analysis program usually occurs in three phases. During the first phase substantial support is provided by the University of Kansas. Advisors from the University provide training in the procedures and techniques of the program. Table 2 is a list of the inservice training sessions. After the training session certification as a Behavior Analysis specialist follows the three-level sequence outlined in Table 3.

During the second phase of the program, local leadership begins to replace that of the University of Kansas. Local staff training coordinators assume more and more of the training and support responsibility. Staff training coordinators and parent training coordinators are generally chosen from the group of Behavior Analysis teachers and parents who have had classroom experience in the program.

The third phase begins during the third year of operations. Local leadership has grown to a point where the program may be continued with only periodic consulting by the University of Kansas.

Table 2

Behavior Analysis Inservice-Training
for Follow Through

ADMINISTRATORS' WORKSHOP	*(University of Kansas)*
A three-day seminar for building principles.	
TRAINER'S PRACTICUM	*(University of Kansas)*
Ten days of classroom training for Staff Training Coordinator in Behavior Analysis procedures.	
LOCAL TRAINING AND DEMONSTRATION CLASSES	*(Local)*
One classroom team at each grade level organized to provide practicum experience for other teams at the same grade level.	
CONTINUING CONSULTATION	*(Local)*
A District Advisor provides monthly three-day training consultations for the Follow Through staff.	
WORKSHOPS FOR TEACHING PARENTS	*(Local)*
Five days of pre-service workshop training for all participating parents.	
ANNUAL WORKSHOPS FOR SPECIALISTS	
a. Parent Trainers' Workshop	*(University of Kansas)*
b. Project Directors' Meeting	*(Variable)*
c. Evaluation Aides' Workshop	*(Local)*
CONTINUOUS PROGRESS EVALUATION	*(Local)*
Computer analyses at prescribed intervals provide every teacher and trainer with a description of the academic progress of every child.	

Source: The Behavior Analysis Plan for Follow Through, p. 7.

Table 3

Behavior Analysis Teacher Training Sequence
for Follow Through

LEVEL I *(Local)*

Reading and discussion for new classroom personnel directed by local Staff Training Coordinator:

Follow Through Guidelines
Behavior Analysis Curriculum Manuals
Behavior Analysis Teaching
(7 self-study lessons)
Recording and Reporting Procedures

LEVEL II *(Local)*

Five-day teaching practicum for new classroom personnel in a training classroom directed by the training team and Staff Training Coordinator:

Reading
Handwriting
Mathematics
Exchanges
Planning
Recording and Reporting

LEVEL III *(Local)*

Team implementation of Behavior Analysis procedures to criterion levels in home classroom with concurrent support and assistance of the Staff Training Coordinator and the District Advisor.

CERTIFICATION--AS BEHAVIOR ANALYSIS SPECIALIST FOR LEAD TEACHERS AND PERMANENT AIDES *(primary grades)*

Source: The Behavior Analysis Plan for Follow Through, p. 8.

The following chart shows the approximate cost per child of the operations of the Behavior Analysis Program over a five-year period.

Table 4

Behavior Analysis Characteristic Allocation of Funds for the 5-Year Plan (Amount per Child)

Category	Phase 1	* Phase 2	Per cent of Total for Phase 2	Phase 3	Phase 4
INSTRUCTION	$ 50.00	$ 84.00	29%	$ 91.00	$ 94.00
PARENT PROGRAM	183.00	149.00	49%	126.00	133.00
TRAINING	67.00	67.00	22%	53.00	43.00
Local Program	*($ 15.00)*	*($ 27.00)*	*9%*	*($ 23.00)*	*($ 23.00)*
Sponsor Contract	*($ 52.00)*	*($ 40.00)*	*13%*	*($ 30.00)*	*($ 20.00)*
TOTALS	$300.00	$300.00	100%	$270.00	$270.00

*Phase 2 represents a complete program with full sponsor participation, similar to that now occurring in Follow Through.

Source: The Behavior Analysis Plan for Follow Through, p. 39.

Evaluation

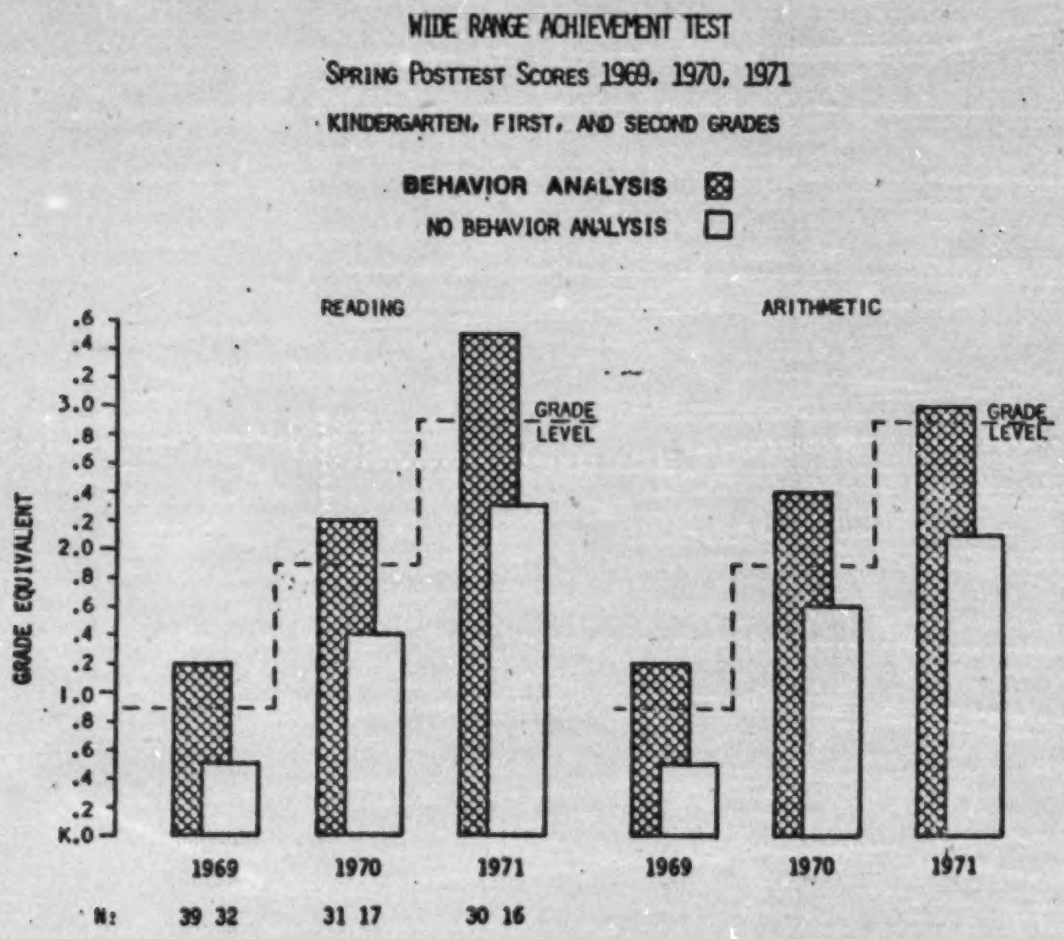
Behavior Analysis classrooms have been implemented in fourteen sites throughout the nation. The program is being used in urban and rural areas as well as on Indian reservations in the West and Southwest. Most of the evaluative studies that have been conducted have examined children's

progress on standardized achievement tests. This section reviews some of those studies.

The Metropolitan Reading Readiness Test was administered to children in Waukegan, Illinois, at the end of kindergarten. Ten per cent of the children were able to score at a level which indicated probable success in the first grade. The following year the Behavior Analysis program was installed. The test was then given to a similar group of children in the same town after they had completed a year in the Behavior Analysis classroom. Over 60 per cent of the children were able to demonstrate that they could succeed in the first grade. After the second year of the program was completed 90 per cent of the children demonstrated readiness for first grade. Similar results were reported in rural Portageville, Missouri.

Poor children, non-poor children, and poor Behavior Analysis children, all in the first grade were compared in Indianapolis, Indiana. The Wide Range Achievement Test was the instrument used after the Behavior Analysis classrooms had operated for two years. The data indicate that both poor Behavior Analysis children and non-poor children scored at grade level, but the non-poor scores were less than those of the Behavior Analysis children. Poor children in traditional classes scored below grade level.

In Trenton, New Jersey, the progress of Behavior Analysis and non-Behavior Analysis children was monitored for three successive school years. All of the children were classified as "low income." The chart below shows the results of the testing in reading and arithmetic.



Reprinted from Behavior Analysis Plan for Follow Through, p. 21.

A study of the Northern Cheyenne Reservation in Montana revealed no significant differences between the scores of English speaking children in Behavior Analysis classrooms, and non-English speaking children. Behavior Analysis teachers use whatever language will maximize student responding. For non-English speaking children, they instruct first in the native language and then repeat in English (Behavior Analysis Plan for Follow Through, p. 22). The achievement of both groups was at or above test norms.

INDIVIDUALIZED INSTRUCTION

Chapter 7

RESPONSIVE MODEL PROGRAM

Program Foundations and Descriptors

The Responsive Model Program is one of twenty national Follow Through programs designed for "disadvantaged" children. It was developed at the Far West Laboratory for Educational Research and Development. Rather than concentrating on changing the child by improving his academic skills, the Responsive Model attempts to change the school in order to have an effect upon the child's attitude toward it (Fitzgibbon & Nimnicht, 1972). The underlying assumption of this approach is,

> . . . that in order to permanently and effectively improve the child's academic performance he must first see himself as being able to be successful in school, and see the school as a place responsive to his needs and respecting him as a person. (Fitzgibbon & Nimnicht, 1972, p. 1). [emphasis added]

Thus, the program is sensitive not only to the skill levels of the children, but to their emotional needs and attitudes as well. Two basic objectives are a part of the program: (1) the development of a healthy self-concept, and (2) the development of intellectual abilities.

Because the program is responsive to the idiosyncratic needs of the children, there is no set structure in the learning environment. However, certain conditions are considered to be crucial to the classroom environment in the Responsive Model Program:

a. It permits the learner to explore freely;

b. It informs the learner immediately about the consequences of his actions;

c. It is self-pacing, with events occurring at a rate determined by the learner;

d. It permits the learner to make full use of his capacity for discovering relations of various kinds;

e. Its structure is such that the learner is likely to make a series of interconnected discoveries about the physical, cultural, or social world (Fitzgibbon & Nimnicht, 1972, p. 6).

The Development of Intellectual Ability

Teaching the child to "learn how to learn" is the overarching objective of the Responsive Model. In other words, the Model is oriented to increasing the child's ability to solve problems. The intellectual basis of the model rests on three kinds of problems identified by Nimnicht, Barnes, & Associates (1971), which play an important role in the learning process. These are non-interactional, interactional, and emotional problems. Nimnicht, Barnes, et al. (1971) explain what is meant by each type.

> A non-interactional problems is a physical or one-person problem. To solve a physical problem, a person acts on his environment, but he is not acted on by it. Solutions to physical problems are generally agreed upon--they can be checked. Puzzles are good examples of non-interactional problems. In fact, intelligence tests are primarily tests of an individual's ability to solve puzzles or one-person problems. The conventional school deals mainly with this kind of problem-solving. Getting men to the moon is evidence of the emphasis on this kind of problem-solving.
>
> An interactional problem involves two or more people and requires a person to think, "If I do this, what is he likely to do?" The individual is being acted on at the same time he is acting. Games like bridge, poker, chess, and hide-and-seek are good examples of interactional problems. So is marriage. Obviously, solutions to interactional problems are not as easily checked as solutions to non-interactional problems.

> Finally, it is possible to think about these two kinds of problems and not consider emotional overtones. But emotion is usually involved in some degree. The problem may be coping with your own emotions or with the emotions of others. When the emotional aspects of the problem become dominant, the problem becomes more difficult to cope with (p. 1).

The goal of the Responsive Model Program is to help children solve these serious kinds of problems. The ability to solve these problems requires the development of the child's other skills:

1. his senses and perceptions, because the senses are an important source of information for the problem-solving process;
2. his language ability, because language is an important tool of the problem-solving process;
3. his concept-formation ability, because he needs to be able to deal with abstractions and to classify information to organize problem-solving (Nimnicht, Barnes, et al., 1971).

The development of intellectual abilities in the Responsive Model Program concentrates on these skills.

The Development of a Healthy Self-Concept

In addition to the development of the senses and perceptions, language, and concept formation, developers of the Responsive Model believe that the learner must develop the self-confidence to cope with many problems--that is, the learner must develop a healthy self-concept (Nimnicht, 1971). Children with healthy self-concepts will exhibit behaviors which enable them to learn better. They will:

1. make better estimates of their ability to perform a given task;
2. make realistic statements about themselves and their racial, cultural, or ethnic group. Statements will be both positive and negative, but more positive than negative;

3. be more willing to take reasonable risks than failure when confronted with a problem they can probably solve;

4. after answering a question or offering a solution for a problem, they will make more realistic statements about the probability of being right or wrong;

5. express feelings or opinions more frequently, with fewer noncommittal responses, fewer stereotypes, and a greater variety of responses to such questions as, "How do you feel about _____?" or "What do you think about _____?";

6. express themselves more freely in writing, painting, or picture-drawing;

7. learn from errors and corrections rather than feeling put down or rejected;

8. be able to express in verbal and non-verbal ways feelings of joy, happiness, fear and anger;

9. be able to use failure in a productive way;

10. take credit for accomplishments and failures;

11. be able to maximize the use of resources to solve problems;

12. be able to interact with other children and adults, i.e., the children will neither be aggressive or submissive in relationships with other children;

13. be able to work within limitations and make the most of the limited situation (Nimnicht, 1971, pp. 5-6).

In the program's own terms, it will succeed in producing a better environment to help children develop or maintain a healthy self-concept, if the children in the program:

1. attend school more frequently;

2. are tardy less frequently;

3. say more positive things about the school, the teacher, and the things they are learning (Nimnicht, 1971, pp. 5-6).

Several techniques are used as a part of the Responsive Model to lead to the realization of these objectives. One such technique is that of

"autotelic" activities--that is, "the activities are self-rewarding and do not depend upon rewards or punishments that are unrelated to the activity" (Fitzgibbon & Nimnicht, 1972, p. 6). The reward is what the child gains from the experience itself. The fact that the child learns that he can accomplish a task, make a discovery, or in some way control a part of his environment is believed to help build a healthy self-concept. Activities within the Responsive Model's environment are structured to lead to these ends.

Another technique employed is that of cultural relevance. Children in the program are accepted for who they are. Activities are structured to give the child the feeling that his culture, family, and social background are important. In these ways, the Responsive Model Program employs operant conditioning and structures activities that will increase both the child's intellectual ability as well as his self-concept.

The Parent/Child Program and Toy Library

An important part of the Responsive Model Program is the Parent/Child Program. Like the instructional component the Parent/Child Program seeks to help children feel better about themselves, and to develop skills and problem-solving abilities. Parents are helped and encouraged to have an important voice in deciding how the schools teach their children. They also help teach their children at home. The Parent/Child component consists of eight two-hour sessions, usually meeting once a week. During these sessions parents meet with Responsive Model staff members to discuss some topic of child development.

At each meeting a new toy is introduced to the parents. The

toys are those that will help children learn basic skills and problem-solving abilities. The parents, through various activities, such as role play, films, slides, and demonstrations, learn how to use the toys with their children in ways that will help their children make discoveries.

The parents then take the toys home for a week and play various games with their children, emphasizing the concepts of positive reinforcement and self-discovery. The wooden table blocks may be used as an example.

> First the child explores and uses the blocks freely on his own. Then he may match the blocks to their outlines. Then he may learn to see differences among various blocks. Later, he may solve more complex problems: What two blocks are the same length as this block? Eventually the child is likely to discover the blocks can stand for the numbers one through ten and can be used to solve many arithmetic problems (Far West Laboratory for Educational Research and Development, b, pp. 8-11).

Parents return each week and talk about what happened during the week. Ideas are exchanged and each parent receives support from others.

After the parents finish the program, they may continue to use the Toy Library, borrowing toys, teaching their children, and reinforcing the Responsive Model. More information about the Toy Library is included in the installation section.

Instructional System

The instructional system of the Responsive Model is relatively unstructured. This is in keeping with the program's intent to respond to the children. Nimnicht (1971) describes what a typical day is like in the Responsive environment.

> As the children enter the classroom in the morning, they are free to choose from a variety of activities such as painting, working puzzles, playing with manipulative toys, looking at

> books, listening to records or tapes, using the Language Master, and building with blocks. They can stay with an activity as long as they like or they can move on to something else whenever and as often as they like. As the day progresses, small groups play games (learning episodes) with the teacher or assistants and others ask to be read to. During the day, the teacher and assistants read to the children, play games with them and respond to the spontaneous activities which build the experience that precedes instruction in some skill or concept. The teacher and assistants respond to the children rather than having the children respond to them. Adult-initiated conversation is limited, but child-initiated conversation is encouraged.
>
> About fifteen or twenty minutes a day are devoted to large group activities such as singing, listening to a story, show and tell, or participating in a planned lesson. A child does not have to take part in large group activities if he does not want to, but he cannot continue in any activity that disturbs the group.
>
> Once each day in kindergarten and first grade classes with learning booths a booth attendant asks a child if he would like to play with the typewriter. If the child says "yes," the attendant takes him to a booth equipped with an electric typewriter. The child begins by simply playing with the typewriter and the attendant tells him what he is doing. Whatever keys he strikes--"x" "a" "y" "comma" "space" or "return"--the attendant names. The child moves from this first free exploration phase through matching and discrimination to production of his own words and stories. At each phase, his discovery of the rules of the new phase (game) is stressed (pp. 11-12).

Although the instructional system is unstructured, there are basic considerations which are taken into account as teachers develop procedures and content. Four criteria serve as a basis for the selection of content:

1. Can we devise a way to help the children learn the concept without distorting its meaning?
2. Is the concept or skill of immediate value to the child?
3. Will the concept contribute to the child's ability to learn more complex concepts?
4. Does a concept fulfill expectations that teachers have at the next grade level? (Nimnicht, 1971, p. 15).

The above criteria help to establish the priorities or emphases that are placed on content, but not all children are expected to learn a set of skills or concepts at any given time.

Learning sequences are developed in the program, but it is not assumed that every child must follow the sequence. It is reasonable to believe that certain learnings are necessary for future learning ability, but the Responsive Model staff does not claim to know exactly which learnings must precede others. Nonetheless, certain sequences are suggested. Nimnicht (1971) cites examples of suggested sequential learning.

In beginning a Head Start classroom, he advises the teacher to help the children learn a variety of concepts including color, size, and shape. After the child has considerable experience with color, size, and shape, teachers may start combining them into more complex concepts such as the largest circle or the green triangle, and eventually the smallest yellow square or the largest blue circle. The child, Nimnicht says, can learn to deal with three attributes by first dealing with one attribute at a time, then two; but he does not necessarily have to follow this sequence of learning.

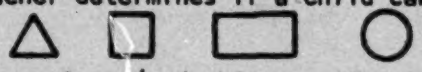
Another series of problems may be posed by matrix games. In one such game, all of the shapes in the first row are red, in the second row green, third row blue, and the last row yellow. All shapes in the first column are circles, in the second squares, in the third triangles, and in the fourth rectangles. One of the cells in the matrix is covered and the child is asked what shape is covered. To solve the problem, he must figure out the shape by looking at the column and its color by looking

at the row. This is a fairly difficult problem for many four- or five-year-old children, yet it seems to be worth presenting. Except for helping the children learn to solve other matrix problems, it is difficult to say how this game contributes to a child's future learning. Nimnicht assumes that it contributes to general problem-solving ability, but, he states, "we do not assume that this or a similar experience is crucial to the future learning ability of the child" (Nimnicht, 1971, pp. 14-15).

The instructional system takes as its objective--the problem-solving processes. Nimnicht, Barnes, et al. (1971) have set forth what they call a tentative list of the problem-solving processes. They include examples of the types of classroom experiences and behaviors which indicate to a teacher that the child is able to solve various problems. This list, including objectives for each of the three types of problems, is included in the Appendix.

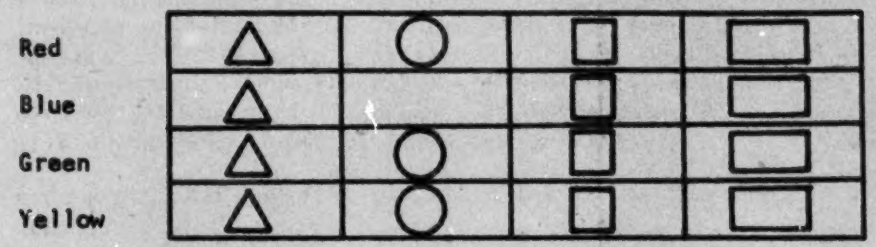
In addition to the specific problem-solving processes, the Responsive Model also attempts to develop more general long-range types of behaviors, mental sets, and personality characteristics, that seem to be related to problem-solving. Although such behaviors are often difficult to assess, efforts are made to be more explicit about such process objectives so that teachers can plan different forms of experience within the learning environment. One of these objectives is to help a child generalize the process being taught and use that process to learn some other skill or concept. Nimnicht, Barnes, et al. (1971) cite examples of how this can be taught (pp. 16-18).

a. The teacher determines if a child can recognize four shapes



and four colors (red, blue, yellow, green). This is to make certain that the child has the skills and concepts necessary to learn the process as it is presented.

b. The teacher uses the shapes and colors to help the children learn to solve a matrix problem (tell what shape and color is covered):



The teacher covers one of the colored shapes (in the example, the blue circle) and asks the child to show her what goes there. The child may be able to say what is covered or he may need to select a blue circle from several different shapes and colors and lay it on the matrix. The teacher would let him uncover the blue circle. If he selected the correct form and doesn't talk about the result, she should say, "You're right; it was a blue circle because all the shapes in this column (pointing) are circles and all the shapes in this row (pointing) are blue, so it had to be a blue circle." She repeats this process of providing examples until the child can demonstrate the rule--he may or may not be able to say the rule.

This is using one general process, induction, to teach the specific of solution of matrix problems.

c. The teacher uses shapes, colors, numbers, and sizes in other matrices. This tests the child's ability to solve matrix problems and to help him generalize the ability.

d. The teacher uses the knowledge the child has of matrix solutions to teach new concepts in mathematics (Figure 1) and language (Figure 2).

10	12	14
8	10	12
6	8	10

Figure 1. Mathematic Matrix

tune	dune
try	dry

Figure 2. Language (Phonogram) Matrix

e. The teacher then extends the ability to solve matrix problems by "breaking the above set" with other matrix problems like this one:

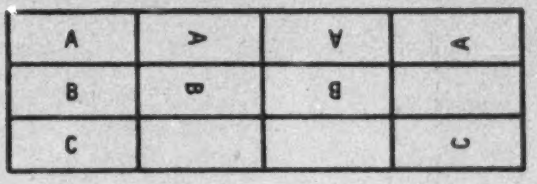


Figure 3. Rotation Matrix

Other objectives include: helping the child learn classification systems, helping the child grasp the concept of sets, helping the child to discovery of new facts and personal errors, asking questions that require more than a yes/no answer.

The instructional system is a flexible one. As a result, the teacher is afforded considerable freedom in planning activities that will respond to the needs of the children.

Delivery, Installation, and Maintenance

Setting up the Responsive Model Program involves teacher training and materials to help teachers and their assistants carry out the program. The training program is organized around a Program Advisor. The Program Advisor is a local person who has been trained by the Far West Laboratory for Educational Research and Development. His job is to work with teachers and their assistants and help them develop a quality responsive educational program. He makes regular visits to ten classrooms bringing suggestions and materials for the teachers and assistants. In the early stages of a program the laboratory may also provide some on-the-site training for teachers. However, the greater responsibility for staff training rests with the Program Advisors.

The training program spans a two-year period. After the two years, inservice training is provided by the Laboratory to maintain the program and train new teachers. Nimnicht (1971, pp. 16-17) explains the structure of the training sessions.

1. A series of four seminars (one two-week and three one-week sessions) plus on-site training for Program Advisors. The seminars will be held at the Laboratory or some central location. The on-site training for Program Advisors will involve someone from the Laboratory observing teachers working with parents or school administrators and critiquing video tapes of classroom activities.

2. A four-day workshop for teachers prior to the opening of school.

3. Three twelve-week training cycles to cover the first year of training. Each cycle consists of eight units of training and provides for four weeks of time for the Program Advisors and each teacher and assistant to decide what needs to be reviewed from the previous eight weeks or what particular problems to focus on, or what activities to undertake that will expand or broaden the training. [These workshops] also provide time for the teachers to meet with the psychologist, parent coordinator, social worker and nurse to discuss these services and their relationship to classroom activities and parent participation.

Inservice training cycle provides a weekly workshop for teachers and assistants that relates to activities in the classroom. The sequence of topics may be altered according to the Program Advisor's and teacher's judgments of what the priorities should be, but the principles that are involved are important. They are:

1. Discuss, illustrate and/or demonstrate the understandings and skills that are involved.

2. Practice the skills or behavior in the classroom.

3. Discuss the results and then, perhaps, practice the same skills or behavior again or move on to the next unit. (Note that the twelve-week cycle does not have to be eight weeks of training units followed by four weeks of review. The

review can come any time that the Program Advisor and teachers desire.)

4. Do not try to learn to practice too many different things at one time.

5. Evaluate the results and go back and practice those skills that still need improvement (Nimnicht, 1971, pp. 16-17).

During the training sessions teachers and their assistants work with training units which give them the opportunity to see the possibilities that exist in the room to help the children achieve certain objectives. For example, the units suggest that the teacher study each area of the room and determine how it might be used to accomplish the objective. Learning episodes are also provided for the teacher. These are brief statements that give a particular objective and procedures to use with a game or toy to accomplish that objective. The teacher may then choose an appropriate learning episode.

The following table gives the topics of discussion that take place during the four-day workshop prior to the beginning of school and outlines the activities of the first four workshops during the school year and the first four training units.

TABLE 1

Outline of the Four Day Workshop Before School Opens
and the First Four Training Units

FOUR DAY WORKSHOP AND TEACHER ACTIVITIES BEFORE SCHOOL BEGINS

Four Day Workshop Prior to School

Overview of the Program
Classroom Organization
Classroom Control
Observations of Children's Behavior
Planning
Adult Relationships
Evaluation
Parent Participation

Before School Begins

Home Visitations
Organization of Room Materials
Plans for the First Week

WEEKLY WORKSHOPS AND CLASSROOM ACTIVITIES FOR TEACHERS AND ASSISTANTS

First Classroom Unit

1. Help Children Adjust to School
   Provide name tags
   Provide individual space with full name and photo
   Practice calling each child by name
2. Establish Rules and Routines for Children
3. Observe Class Behavior
   What they do and do not do
4. Establish Adult Relationship
   Working as a team

First Workshop for Teachers

(Check when Covered)

___1. Discuss Children's Adjustment to School
___2. Discuss and Evaluate Rules and Routines
___3. Discuss Teacher's Observations of the Class
___4. Discuss Adult Relationships
___5. Demonstrate One of the Activities for Children
   Songs using children's names
___6. Discuss Specific Language for Teachers to Practice
   Use verbs to describe action

TABLE 1 (Continued)

WEEKLY WORKSHOPS AND CLASSROOM ACTIVITIES FOR TEACHERS AND ASSISTANTS

Second Classroom Unit

1. Continue to Help Children Adjust to School
2. Post Rules and Routines for Easy Reference
3. Continue Observations of the Class
4. Teachers Allow for Planning and Evaluation Time Together
5. Practice Using Action Words (verbs) to Describe Children's Play
6. Use Songs with Children's Names

Second Workshop for Teachers

___1. Discuss Observations of the Class
___2. Discuss Songs using Children's Names
___3. Discuss use of Specific Language to Describe Children's Actions (verbs)
___4. Discuss Planning
Available materials in activity areas for free exploration
___5. Discuss Use of Classroom Control Technique Anticipating Problems
X 6. Discuss Responsive Environment Test (R.E.T.)

Third Classroom Unit

1. Continue to Observe the Class
2. Continue to Use Songs with Children's Names
3. Continue to Use Verbs to Describe Action--Indoors and Outdoors
4. Organize Materials to be Available to Children
Change during the day according to children's interests and needs
5. Practice the Classroom Control Technique--Anticipating Problems
6. Complete Child Data Sheets for Testing

Third Workshop for Teachers

___1. Discuss Planning for the Week
A Focus--Color
Free Exploration with color during spontaneous play
Concept Area
Art Activities
Manipulative Toys e.g.
Cuisenaire rods
Needed materials to make color lotto game

TABLE 1 (Continued)

WEEKLY WORKSHOPS AND CLASSROOM ACTIVITIES FOR TEACHERS AND ASSISTANTS

___2. Continue to Discuss Classroom Control Technique
of Anticipating Problems
Teacher's consistency of rules/limits
___3. Responsive Test (R.T.)
___4. Observations of the Class

Fourth Classroom Unit

1. 1. Provide Experiences for Free Exploration with Color
2. Practice Anticipating Problems
3. Begin Testing with R.E.T.
A few children a day
4. Continue Using Songs with Children's Names
5. Continue Describing Children's Action
Indoors and Outdoors
6. Continue to Observe the Class

Fourth Workshop for Teachers

___1. Continue to Focus on Color
Add another color--free exploration e.g.
Easel paints, water trays or playdough
Make color lotto game
Discuss color lotto #1
___2. Discuss Developing the Concepts of Size During Spontaneous
Play--Demonstrate with Unit Blocks Longest and Shortest
___3. Discuss Classroom Control Technique
Making Positive Statements--Positive Redirection
X 4. Review Testing
Understanding of the procedures
___5. Discuss use of Volunteers in the Room

(Source: Nimnicht, 1971, pp. 19-21)

In addition to teacher training, the Far West Laboratory supplies a support system for the Parent/Child component and the Toy Library. Nimnicht (1971) lists the support system for this component.

1. A two-week course for the teacher-librarians that is conducted by the Laboratory's staff.
2. A detailed manual for the teacher-librarian outlining the course and instructions for establishing and maintaining the library.
3. A set of toys, games, and other materials with learning episodes.
4. A cross-reference filing system to aid the librarian in recommending games and toys.
5. A set of strip films and audio tapes to demonstrate the use of the toys so that the parents can see the way the toy is used before checking it out of the library (Nimnicht, 1971, p. 24).

In conclusion the installation of the program involves three basic areas: teacher training, materials, and the Parent/Child Toy Library component. Adequate support is provided by the Far West Laboratory in all areas. Additional information is available from the Laboratory staff.

Evaluation

Many of the stated objectives of the Responsive Model Program are not easy to define, in operational terms. As a result, evaluation of the program's effectiveness is difficult. Numerous studies have been conducted to assess the program. Many of these studies have examined standardized achievement test scores administered to the children. Such measures limit the scope of evaluation to the acquisition of skills in reading, arithmetic, and science. However, measures on such variables as a child's understanding of his cultural background, or his "ability to learn how to learn" are not

adequately developed to be used in the evaluation of the Model. Often these types of objectives are necessarily measured subjectively by the individual teachers in the program. Nonetheless a variety of studies have sought to determine the success of the program.

Fitzgibbon & Nimnicht (1972) summarize much of the research. For example, during the first year of the program, 1964-65, disadvantaged three-year-olds gained an average of 3 points on the Peabody Picture Vocabulary Test (PPVT), and four-year-olds gained an average of 13.5 points. The following school year three-year-olds gained 9 points and four-year-olds who were in their second year of the program gained 1 point. In 1966-67, three-year-olds gained 3 points, first-year four-year-olds gained 10 points, and second-year four-year-olds gained 7 points.

Children who had been exposed to the program also compared favorably with the standardization groups on the Cincinnati Autonomy Battery and the Pre School Inventory (PSI). Similarly, on a number of tests developed at the school, children increased significantly in their knowledge of colors. Pre-posttest scores on the Categories Test suggest that three- and four-year-olds who were in the program were learning to form concepts.

The first formal evaluation of the program took place in the 1968-69 school year. During that year the children increased scores on the PSI from the 35th to the 65th percentile.

In the various Follow Through communities, more specific research results are available. Fitzgibbon & Nimnicht (1972) state:

> The results reported by the individual Follow Through communities are encouraging. For instance, in Fresno, California, during the school year 1968-69, the district evaluated three different

> models of instruction to determine their relative effectiveness. There was a significant difference between the three models, with children in the Responsive Model demonstrating the greatest IQ test score gains (Hansen, 1969; Taylor, 1970). A report from Cleveland indicated that for 1969-70 kindergarten children in the Responsive Model performed significantly higher on tests of academic and reading readiness than comparison children at the end of one year's experience in the program; second grade children also showed higher academic performance than comparison children (Halalsa, 1970). Similar reports were received from St. Louis, (Anderman et al., 1970; Barclay, 1970) and from Salt Lake City (Russo, 1970) (p. 14).

Even though the Responsive Model Program is not a structured, drill-oriented program, the data indicate that children in the program are making academic gains. These studies are supported by other studies which have been abstracted by the Far West Laboratory. For example, Nimnicht, Rayder, & Johnson (1969) found that the children in their samples demonstrated considerable achievement in the Learning Booths. Abbe & Nimnicht (1970) reached similar conclusions.

Rayder, Fitzgibbon, Alward, et al. (1970) used a number of measures to test the effectiveness of various Responsive Models. They measured: (1) four subtests of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI), the Vocabulary test, the Similarities test, and Picture Completion test, and the Block Design test; (2) three factors measured by the PSI--Concept-Activation, Personal-Social Responsiveness, and Associative Vocabulary; (3) a subtest of the Cincinnati Autonomy Test--the Innovative Behavior Test; and (4) a categories test designed by the Laboratory to test the ability of young children to make simple classifications. The intellectual development of first grade children was measured by six subtests of the Metropolitan Readiness Test: word meaning,

listening, matching, alphabet, numbers, and copying. They state their findings thus:

> The test results reflected a positive change in the intellectual abilities for a majority of children in the Responsive Model.
>
> Kindergarten findings: Separate scores were obtained for each of the four instruments. On the WPPSI subtests, poor children increased from a pre-course average of 34 to a post-course score of 40. National norms indicate that 40 is an average score. Non-poor kindergarten children increased approximately 14 percentile points for 296 poor children and 50 percentile points for the 138 non-poor children. Results on the IB and the "C" test showed that these instruments were statistically unreliable.
>
> First grade findings: At the first grade level, the average Metropolitan scores on the pre-course administration was 40 out of 102. A score of 40 is equivalent to the 23rd percentile calculated on the standardization sample. Post-course scores increased 28 points to 68 which fell at the 77th percentile on norms calculated at the beginning of the first grade (Rayder, Fitzgibbon, Alward, et al., 1970, p. 2).

In addition to the above studies, other studies were succinctly described in Research Capsules, and a series of Occasional Research Reports. Most of the data are encouraging. New measures are employed. It is not yet possible to fully evaluate the program in terms of all the objectives. However, extensive data have been collected and research continues on the Model. The many studies indicate that academic abilities are increased by the Responsive Model Program.

Chapter 8

PRIMARY EDUCATION PROJECT

Program Foundations and Descriptors

The Primary Education Project (PEP) is an individualized instructional program based on the notion that children will learn best at their own rates. PEP was developed by Lauren Resnick of the Learning Research and Development Center of the University of Pittsburgh, in cooperation with the university's school of education and the Pittsburgh public schools.

The program is designed for a heterogeneous urban population of children--preschool through third grade. It emphasizes correct sequencing of content materials for each child, through careful analysis of the skills he needs and the prerequisites he must master to achieve those skills. The Primary Education Project is closely allied with Individually Prescribed Instruction, the highly successful elementary level program also developed by the Pittsburgh Learning Research and Development Center.

PEP's basic intent is to teach children how to think and learn by teaching them the skills and concepts that underlie intelligent behavior (Resnick, 1967, p. 3). This is accomplished by structuring a planned and efficient learning environment.

Curriculum construction is accomplished by a process called component analysis. Children's behavior is analyzed analytically and empirically to determine the skills and concepts to be taught. Drawing on information from cognitive psychology, teachers set educational objectives

for what the child should be able to accomplish by a particular time. Each of these objectives is then logically analyzed to determine the skills prerequisite to it. The hierarchy of objectives that results provides a formal curriculum sequence from which teaching materials and activities can be derived. Children can be "placed" in this curriculum by means of diagnostic tests.

Three general classes of skills have been identified for inclusion in the PEP curriculum: (1) orienting and attending skills, (2) perceptual and motor skills, and (3) conceptual and linguistic skills. These skills are thought to underlie all conceptual functioning.

Orienting and attending skills are those skills that permit a child to function well in a classroom and to learn from the environment. These include the ability to concentrate on a task and resist distractions; the ability to follow directions; the ability to accept delayed rewards; the ability to accept verbal rather than concrete rewards.

The perceptual-motor skills include gross motor skills, such as those needed for controlling one's movement through space; and fine motor skills, such as those needed for using writing instruments. In addition, a set of "positioning" skills which underlie the development of more complex spatial concepts are emphasized. Sensory skills, including a wide range of visual, auditory, and haptic perception and discrimination behaviors, are also included.

Classification, reasoning, spatial relations, plan-following and memory, together with language facility make up the conceptual-linguistic category. Mathematical concepts and processes are also included in this

category. A list of the skills included in PEP is found in the Appendix.

Instructional System

The strategy which PEP employs is that of carefully structured, "programmed" instruction. Children are exposed to controlled and explicit sequences of instruction.

The sequences include all the steps through which a child must pass in order to achieve a learning objective. Teaching materials are prepared for each step in the sequence. Tests or observational procedures can also be designed (Resnick, 1967, p. 13). Children progress by interacting with teaching materials and with other children. As their conceptual powers grow, periodic tests are used to assess their progress and to "place" them in a new curriculum sequence.

Since the teacher rarely has time to apply component analysis to each objective she would like to teach, she usually relies on the curriculum sequences supplied by PEP developers. She uses these sequences to develop materials and plan classroom activities. Still, she must be sure that the sequence chosen is workable for a particular child. Examples of curriculum sequences can be found in the Appendix.

The curriculum sequence need not be evident to a child as a constraint. However, the teacher can use the sequence to keep track of each child and how he is progressing through the hierarchy of skills (Resnick, 1967, p. 14).

The detail of the curriculum sequences permits a great deal of individualization. Teachers know exactly what behaviors to look for and how to evaluate them before introducing children to the next step. Resnick

says, "the detailed curriculum sequence permits the possibility of a 'match' between the child's present conceptual structure and the kinds of lesson materials that are presented to him on an individual rather than an age group basis" (1967, p. 15).

Children are generally allowed to interact with materials and other children as they wish. The teacher serves in a non-directive, reinforcing role. Tokens are sometimes used to keep children working at their assigned tasks. But as time goes on, children are expected to work more and more independently of the tokens (Maccoby & Zellner, 1970, p. 19).

The formal curriculum sequence of PEP does not, however, imply a particular style of classroom organization. According to Resnick (1967, p. 14), the PEP curriculum can be applied to a wide range of classroom structures. The sequences can be used in a classroom that requires the participation of all children in drills, with little room for choice on the part of either child or teacher, as in Bereiter and Engelmann's (1966) program for the disadvantaged. It can equally well be used in a classroom whose organization is free and open, as in the Montessori model or some modification of the progressive nursery school.

Delivery, Installation, and Maintenance

The Learning Research and Development Center continues to carry on research and development work on PEP. The University of Pittsburgh's School of Education developed the format for inservice and preservice teacher training. It was the responsibility of the Pittsburgh Public Schools to be legally responsible for the children, to provide the facilities, and also to appoint the project's general director.

Complete information regarding implementation of PEP is available from the Learning Research and Development Center of the University of Pittsburgh. PEP includes teacher training packages and a staff of PEP Educational Specialists who are available for pre- and inservice assistance. The reader may contact Dr. Warren Shepler at the University of Pittsburgh for more information.

Evaluation

PEP is currently being used in seven sites, each of which is undergoing a process of research and evaluation. Results of the research and evaluation are available from the University of Pittsburgh Learning Research and Development Center. However, because the research is still ongoing the available data do not give a complete picture and are not reported here.

NON-INSTITUTIONAL INSTRUCTION

Chapter 9

THE FLORIDA PARENT EDUCATION MODEL

Program Foundations and Descriptors

The Florida Parent Education Model emphasizes intervention in the homes of low income children to bring about positive educational and emotional changes. The procedures and orientation of the program are adapted from two years of research on infant stimulation, conducted by Ira Gordon of the University of Florida.

Gordon believed that changing the home environment and training mothers to stimulate their children at an early age could break the poverty cycle. He designed the Early Child Stimulation Through Parent Education Project to train mothers to interact effectively with their young children and thus foster the child's development. The program, as it was first implemented, was aimed at infants (up to one-year-old) to young (three-year-old) children. It used parent educators from the same population as the mothers who visited the mothers in their homes and taught them "stimulation exercises" to use with their children.

In 1968, Gordon adapted and extended the infant stimulation project to a program for older children, the Florida Parent Education Model. This program is a Follow Through model (for children five to eight years old), which focuses on the relationship between the child's home environment and his activities in school. Like the Early Child Stimulation

Project, the Florida Parent Education Model relies on a specially trained, paraprofessional, parent educator who is from the peer group of the children's mothers.

The parent educator serves a triple role. She visits the children and the mothers in their homes, where she teaches the mother tasks she can do with her child to supplement school learning experiences. She also provides a liaison between the home and the school, encouraging mothers to participate in the school's advisory committee and referring them to medical and social services. Parent educators also work as teaching assistants in the classroom. They assist the classroom teacher in preparing and teaching tasks to small groups of children, and they observe and gather data on individual children that help the teacher adopt strategies and devise tasks suited to each child's particular needs.

Ira Gordon describes the four major elements of the Florida Parent Education Model:

> 1. Training the mothers (two to each classroom) in the role of combined parent-educator and teacher auxiliary,
>
> 2. training the teacher in the use of paraprofessional personnel,
>
> 3. developing the materials for family use that take into account not only the school's goals for the child but also, and equally, the family's expectations, goals, life-style, and value system, and
>
> 4. involving the policy advisory committee in all phases of the program.
>
> (Gordon, 1971, p. 28)

The program aims to bring parents into closer contact with schools by developing confidence and cooperation in them. In this sense

parents rather than children are the primary targets of the program intervention. Paraprofessional parent educators provide the mothers with non-threatening role models with whom they can communicate easily and who can encourage them to participate in their children's education.

Instructional System

Instruction in the Florida Parent Education Model takes place both at home and in school. The parent educator coordinates this instruction through weekly visits to parents in their homes. The in-school curriculum is flexible. The Florida Parent Education Model does not specify the lessons or the subjects that teachers must use. Teachers adapt classroom activities to local needs. The program encourages curriculum development based on the developmental principles of Jean Piaget, although teachers are free to use other curriculum materials if they so choose (Greenwood, 1969). Gordon says, "The effort is to enable the teacher and school to examine the curriculum and apply an analytical orientation to it. . ." (1969b, p. 71).

On a typical day in the classroom, the teacher and parent educator plan and introduce a variety of learning tasks built around a single Piagetian principle. The tasks are used to diagnose and then instruct the children. The parent educator carefully observes each child to see whether he has mastered the task. She may use the rating scale developed at the University of Florida, the Florida Affective Categories, to check off how children are succeeding.

If the parent educator finds that a particular child is having trouble, she informs the teacher. Together they devise new tasks that

the parent educator can introduce in the child's home. Or, at the teacher's direction, the parent educator might work with the child individually or in a small group. Throughout the schoolday, the parent educator provides another pair of hands and eyes for the teacher. The information provided to the teacher by the parent educator helps the teacher modify teaching strategies and adapt curricula in ways that make them more flexible and individualized.

The teacher and her parent-educator assistants, (usually two to a classroom) work as a team. The teacher is the team leader, and she is responsible for developing the curriculum and for providing an individualized program for each child (Breivogel, 1969). In addition, it is the teacher's responsibility to build a relationship with the parent educator that allows the parent educator to work effectively without direct supervision.

Gordon considers the parent educator to be the one indispensable element of the Florida Parent Education Model. However, the teacher retains the final professional responsibility for what is done in her classroom. Decisions about what tasks to teach and to whom are made by the teacher. The parent-educator's role is to assist in carrying out these decisions, (Gordon, 1969b).

It is expected that the Piagetian principles emphasized in the Florida Parent Education Model can be incorporated easily into local school curricula. Teachers are provided with a set of objectives, in the form of a taxonomy which lists the Piagetian mental operations. They construct learning tasks around these objectives. (The list is included

in the Appendix.) The taxonomy is usually compatible with the school's normal curriculum, and tasks can easily be modified to suit Piagetian principles. Teachers also receive a list of suggestions for developing the tasks consistent with Piagetian theory.

The University of Florida offers continuous consultation and training for teachers and parent educators to help them construct and assess the learning tasks. To promote internal task consistency, sample tasks are sometimes offered to local centers for their use. The tasks used by local centers are periodically monitored and assessed by the University of Florida to determine the presence of Piagetian principles. This information is then fed back to the centers to help them construct further tasks.

The tasks developed are called "Neo-Piagetian," because they attempt to convert Piagetian principles into instructional materials. Betty Siegel gives an example of a task that might be introduced in school and then modified at home. Its aim is to use real objects to develop the mental operation of classification.

> The materials consist of a collection of about ten different objects for each participant. A collection might include one red crayon, one green crayon, a rock a piece of chalk, a red rubber ball, one piece of green construction paper, one piece of red construction paper, and a piece of white string. The action might go something like this: The aide-parent educator or teacher asks the children to place the objects in piles with the other objects they are somewhat like. After a child has sorted the objects, he might be asked about what he has done. Such questions as these might be asked: (a) "In this pile, how is the pencil like the piece of paper?" (b) "Why didn't you put this green pencil in the same pile as the red pencil?" (c) "How else could you arrange the objects?" There is no correct or incorrent arrangement. The important point is

> that the arrangement be logical to the child. Adaptations of this task for home use might be made by asking the mother to engage in the same kind of activity, only using a variety of collections possibly found in the home, such as metal objects, fruits, vegetables, buttons, coins, etc. (Siegel, 1961, p.93).

The parent educator's observations of the child at school and of his parents at home determine what learning tasks the child is given. The teacher develops a personalized curriculum for the child based on the parent-educator's data.

The tasks introduced by the parent educator in the children's homes are kept parallel to the instruction going on at school. The teacher and parent educator work together to devise tasks that will supplement and support the children's learning.

In the home, the parent educator demonstrates the task to the mother. She helps the mother understand its nature and purpose, and she shows the mother how to teach it to her child. The parent educator also tells the mother how to assess her child's performance. Between visits the mother will work with her child on the task. While in the home, the parent educator gathers information on the mother and the home environment which can be used to devise further learning tasks for the child. This constantly renewed data helps keep the curriculum flexible and diagnostic.

In addition to her responsibilities as a home visitor and a classroom aide, the parent educator spends one day a week in in-service training activities. Here she builds clerical and observational skills and gains competence in constructing Piagetian tasks.

No academic requirements are set for the parent educator, but Siegel presents several other expectations. "She should be a mother whose child is in the school in which she works, or who lives in the immediate community served by the school. She must, of course, fit the requirement for inclusion in a Title I population. It is highly desirable that she be literate, intelligent, and manifest an interest in the affairs of the local community," (Siegel, 1969, p. 90). Generally the parent educator is chosen by the local community. It is considered important to the program that the parent educator be able to identify and communicate with the mothers she will help.

Delivery, Installation and Maintenance

The University of Florida provides training and support services to help install the Florida Parent Education Model. Extensive preservice and inservice training is provided for teachers and parent educators. Consultants from the University of Florida correspond with the local centers, and they visit each site monthly to work directly with teachers and parent educators in classrooms, on home visits, or in workshops.

Preservice training is conducted in summer workshops of approximately two to three weeks length. Among the experiences provided in the workshops are lectures, discussions, and laboratory experiences in child development and learning. The developmental theory of Piaget is discussed. Parent educators learn techniques for observing teachers and children in the classroom. They are also given practice in administering the Florida

Affective Categories and various teacher assessment instruments. They learn techniques of interviewing and teaching mothers in the home. During preservice training, teachers discuss techniques for supervising parent educators in their classrooms. They observe actual home visits. Teachers learn to construct Piagetian tasks through lectures, discussions, and practice and in teaching them to children. Teachers are trained to interpret the data gathered by the parent educator and to use it to make curriculum decisions.

Inservice training is conducted by the University of Florida. Consultants provide constant feedback to teachers to help them in their decision-making roles. They make periodic visits to classrooms and lend assistance when needed. The University of Florida provides a data monitoring service by which observations are scored, interpreted, and sent back to teachers in the classrooms.

The Florida Parent Education Model was originally installed in six communities: Richmond, Virginia; Jonesboro, Arkansas; Philadelphia, Pennsylvania; Yakima, Washington; Jacksonville, Florida; and Lac du Flambeau, Wisconsin. It has since expanded through the Follow Through network and has been applied in several Head Start centers.

Effective teamwork is essential, not only between teacher and parent educators but also between the University of Florida and local school and community representatives.

Gordon cautions that the program may not go well in its early stages. Creating the flexibility and the understanding necessary to install the model requires extensive consulting, and inservice experience

in give-and-take interactions and diagnostic curriculum development (Gordon, 1969b).

Evaluation

Since the home is a major target of the Florida Parent Education Model, extensive data are collected on both children and their families. These data include such factors as the number of people living in the home, space conditions in the home, who serves as the child's primary source of instruction and stimulation in the home, and how much verbal interaction the child receives. Data are also collected on the marital status of the mothers and the health situation of the children.

The following instruments are used to collect this data: Parent Educator Weekly Report, How I See Myself, Social Reaction Inventory, Children's Self-Social Construct Test, Florida Affective Categories, Teacher Practices Observation Record, Reciprocal Category System, Purdue Teacher Opinionnaires, and the Home Interview Schedule. (See Table I for the schedule of data collection and who collects it.) Examples of these instruments are available from the Institute for Development of Human Resources, University of Florida. A brief description of each instrument is included in the Appendix.

These data are used to assess the effectiveness of the parent educator in influencing the home environment and to assess the effect of the program treatment on the children. Pre- and posttest results are collated and analyzed by the Institute for Development of Human Resources, University of Florida.

We were unable to obtain results of the effectiveness of the Florida Parent Education Model. However, data collected on Gordon's infant project, The Early Child Stimulation Through Parent Education Project, showed that that program can effect positive changes within the mothers and their children. For example, during the first year of life children whose mothers were educated in the stimulation series were more highly developed than those whose mothers received no instruction ($p < .05$). Similar results were found for children during the second year of life when compared with controls. The experimental children also performed better on standardized measures of development. Using two Social Reaction Inventories, it was also found that mothers who received instruction in the program had a higher expectancy of internal control than those who did not receive instruction ($p < .05$). However, the self-esteem of the experimental mothers was not significantly different from that of the controls at the end of the instruction.

The Early Child Stimulation Project proved generally effective in bringing about desired changes in the behavior of "disadvantaged" children and their mothers. Since the procedures and premises of the Early Child Stimulation Project are preserved in the Florida Parent Education Model, that program should be expected to produce similar results. Results of the model are being compiled in the ongoing evaluation of Follow Through programs.

TABLE 1. DATA COLLECTION INSTRUMENTS[1] AND SCHEDULE USED IN FLORIDA'S PARENT EDUCATION FOLLOW THROUGH MODEL

Instrument	Pre-Test	Post-Test	Monitoring	Administered By:
1. Parent Educator's Weekly Report[2]			x	Parent Educator
2. How I See Myself[2]	x	x		Parent Educator
3. Social Reaction Inventory[2]	x	x		Parent Educator
4. Children's Self-Social Construct Test	x	x		Parent Educator
5. Florida Affective Categories (class version)	x	x		Pre & Post - Observation Team &
(ind. version)			x	Parent Educator
6. Teacher Practice Observation Record	x	x		Observation Team
			x	Parent Educator
7. Reciprocal Category System	x	x		Observation Team,
			x	Tape Recordings of class sent to U. of Fla.
8. Purdue Teacher Opinionnaire	x	x		Fla. Observation Team
9. Home Interview Schedule (Environmental Process Characteristics Questionnaire)	x	x		Parent Educator

[1] A description of these instruments, the type of data they collect and details on their development may be procured from the Institute for Development of Human Resources, University of Florida at cost.

Source: Breivogel, 1969, p. 65.

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